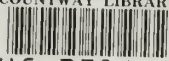


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VOL. 81

NO. 1

INDIANA MEDICINE

The Journal of the Indiana State Medical Association

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Vol. 81, No. 1
JANUARY 1988

Devoted to the interests of the medical profession and public health in Indiana since 1908.

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THE FRANCIS A. COWLEY
LIBRARY OF MEDICINE
BOSTON, MA
PLS 5 1988

USPS 284-440
ISSN 0746-8288

OFFICE OF PUBLICATION:

3935 N. Meridian St.,
Indianapolis, Ind. 46208
Tel: (317) 925-7545

INDIANA MEDICINE (ISSN 0746-8288) is
published monthly by the Indiana State
Medical Association. Second-class
postage paid at Indianapolis, Ind.

POSTMASTER: Send address changes to
INDIANA MEDICINE, 3935 N. Meridian
St., Indianapolis, Ind. 46208.

Yearly subscription rates: \$20 domestic,
\$22 Canada, \$23 foreign. Library rates:
\$18 domestic, \$20 Canada, \$21 foreign.
Senior ISMA members and full-time
medical students—\$10. Single copies not
available. Subscriptions are renewable
annually.

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ments made in their articles. Scientific
and editorial contributions are accepted
for exclusive publication, subject to
editorial requirements. Publication dead-
line: 1st day of month preceding month
of issue. Instructions for authors avail-
able upon request.

All issues since 1967 are available on
microfilm from University Microfilms In-
ternational, 300 N. Zeeb Rd., Ann Ar-
bor, Mich. 48106. Indexed in Index
Medicus and Hospital Literature Index.

Advertising rates and data available
upon request.

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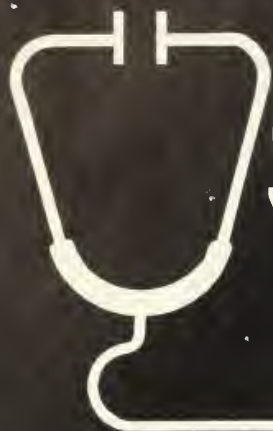
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ABOUT THE COVER

Dr. Shirley Thompson Khalouf presents the ISMA Presi-
dent's Medal to Dr. John D. MacDougall. The presentation
took place during President's Night at the ISMA annual
convention. For a report on this year's convention, please
turn to page 48.—PHOTO BY ED LACEY JR.



STETHOSCOPE

EXAMINING STATE & NATIONAL MEDICAL ISSUES

Catastrophic Health Insurance appears to be on the back burner in the Congress until later this month. At year's end, more "pressing" issues faced the Congress and so the proposal which has come under debate for many months is still on hold.

The AMA has reported a 6.5 percent increase in physician's 1986 income over 1985. Physicians' average incomes for 1986 were \$119,500. The increase is attributed to longer hours worked. Doctor's saw an average of 75.7 patients in their offices each week. The AMA figures show office visit charges were up 3.5 percent in 1986.

The increase in malpractice insurance premiums was lower in 1986 than in 1985.

MAAC violation letters...

Approximately five percent of non-participating physicians nationwide received letters saying they did not stay within their maximum actual allowable charge (MAAC) limits.

Prompted massive confusion. Compliance with MAACs is difficult since the law stipulates that MAAC limits don't apply to individual charges, but is an average of all charges for the procedure in a calendar year. The late receipt of letters meant many physicians only had one month to lower their charges to bring down the average. Congress still may change the law to permit notification earlier in the year. In the meantime, the Health Care Finance Administration determined that physicians who received the warning letters should reduce all future charges to the MAAC level.

Final rules for federal-funding of abortions were published in mid-December. The HHS rules prohibit federally-funded family planning clinics from advising pregnant women about abortion. Publication of the rules prompted 75,000 letters: 55 percent in favor; 45 percent opposed. The AMA opposes the rules.

The new national data bank on malpractice claims and licensure actions is expected to cost at least \$3.2 million. That's the amount HHS has requested from Congress. The purpose of the data bank is to help hospitals monitor doctors seeking admitting privileges.

HHS will not have to submit proposed changes to the Peer Review program for public comment prior to implementing them. A U.S. Appeals Court over-ruled a lower court decision that said HHS had violated the Administrative Procedures Act by not publishing rules before they were implemented.

The Presidential AIDS Commission is still calling for random AIDS testing. Bases its view on the wide-ranging infection estimates. The Centers for Disease Control is proposing a \$5 million door-to-door pilot project in three cities. The project would be expanded, if successful, to random tests of patient blood samples from hospitals and public health and family planning clinics in 30 cities. Results would not always be given to donors.

IN INDIANA...

Low income AIDS patients may qualify for AZT (Retrovir) treatments through \$120,000 federal grant. This AIDS Drug Assistance Program is administered by the Indiana State Department of Public Welfare.

To apply, applicants must be Indiana residents, be determined appropriate candidates by their physician, have a gross income of less than 200 percent of the federal poverty guidelines and have neither health insurance nor Medicaid coverage.

For more information, contact Tara Lenn French (317) 232-4334.

At least two bills in this session of the Indiana General Assembly will address AIDS.

Senate Bill 9 contains some 20 new provisions concerning AIDS. Some of the most significant for physicians:

1. Requires all physicians, hospitals and labs to report to the state board of health each case of HIV infection including confirmed cases of AIDS.
 2. Sets requirements for treatment and disposal of infectious wastes.
 3. Waives the state law regarding physician-patient confidentiality when a carrier of a dangerous communicable disease carelessly engages in behavior that has been demonstrated to transmit the disease.
 4. Requires all physicians and dentists to attend AIDS training sessions.
- Another bill, SB 29 would require pre-marital syphilis and AIDS testing.

The state board of health has revised the forms of Indiana certificates of live birth, fetal death and death. The revisions became effective Jan. 1. The ISBH sent revised certificates to all hospitals and held nine workshops around the state to alert physicians to the change.

Reminder: no one but a coroner or medical examiner should sign the bottom portion of death certificates, because doing so invalidates the form.

Doctors who have questions about the forms should contact Jerry W. Cash, State Registrar, Indiana State Board of Health, 1330 W. Michigan St., P.O. Box 1964, Indianapolis, IN 46206-1964, or call (317) 633-0253.

The AMA has prepared a Physician Leadership Kit to assist medical societies and their members in their Tobacco-Free Society efforts. The kit includes three booklets which describe how to lobby, how to develop smoke free programs for health facilities and how to convince students to develop tobacco-free lifestyles.

A limited number of kits are available from the AMA, 535 N. Dearborn, Chicago, IL 60610.

MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis



Syphilis is the topic for this page of Notes. The illustration shows the knees of a patient with advanced tertiary syphilis, specifically, *tabes dorsalis*, the Charcot joints being the result of chronic lack of proprioception.

The source of the illustration is the Old Pathology Building whose files contain hundreds of clinical photos on glass plates, tissue blocks embedded in celloidin, microscope slides and photomicrographs. *Tabes dorsalis* is well represented in this collection.

Syphilis in the year 1988 is just as prevalent as ever except that the tertiary forms are now rarely seen thanks to the introduction of the sulfa drugs and penicillin in the early 1940s.

Syphilis in the year 1888 was a common and formidable problem. It was detected in one in ten of hospital admissions and was the principal cause for admission to the state mental institutions.

The 1888 volume of *The Transactions of the Indiana State Medical Society* features an article by Dr. Alembert W. Brayton, (who was the state's foremost authority on syphilis at the time) in which he attempts to focus on etiology which was then unknown. He reported the similarity of the local tissue reaction of syphilis to tuberculosis, leprosy, glanders, and actinomycosis, noting that the chancre, the condyloma, the gumma, the tubercle, etc. were infective tumors (infectious granulomas) of limited blood supply whose natural course was to break down and ulcerate. These similarities in tissue response were recognized and most known to be of bacterial etiology, but that of syphilis was still unknown. Dr. Brayton expressed the opinion that syphilis was probably also of bacterial origin. Demonstration of that etiological factor, the *Spirochaeta* (*Treponema*) *pallida*, was achieved in 1905 in Berlin by Fritz Schaudinn. The Wasserman



Test followed in 1906. Paul Ehrlich discovered Salvarsan in 1910. World War I led to the malarial treatment of syphilis by Julius Wagner von Jaurig and World War II to the means for essentially eliminating the tertiary forms of the disease.

The term, *tabes*, is ancient, going back to the time of Hippocrates. The ancient term refers to chronic wasting disease, not necessarily to the disease now known as *tabes dorsalis*. Sir William Gowers credits Todd (1847) with the first clinical description, who predicted and later verified that the disease manifestations result from posterior column disease. Romberg described the clinical features in 1851, emphasizing the importance of the pathognomonic test he had been describing over the preceding ten years (Romberg test) in which the tabetic patient is unable to maintain his standing posture when he closes his

eyes (the test being specific for posterior column disease, not for cerebellar disease—a common present-day misconception). Worldwide recognition of the disease stems primarily from Duchenne's 1858 description which emphasized the ataxic slapping gait. Duchenne referred to the disease not as *tabes dorsalis* but as locomotor ataxia, a more descriptive term clinically speaking.

Locomotor ataxia is the name by which the disease first appears in Indiana medical literature. Three articles by this title appear in the *Transactions* prior to 1907, none being listed for *tabes dorsalis*.

Although the causative organism for syphilis was not identified until 1905, and its relationship to general paresis and *tabes dorsalis* shown less than a decade later (by Noguchi) the clinical impression of a relationship of *tabes* to syphilis had been noted earlier by numerous physicians in the final quarter of the nineteenth century. Gowers credits Fournier (1876) as being first in making this observation. Dr. James Gregg of Fort Wayne, in a review of the literature, reported in the 1886 issue of the *Transactions* that although many physicians find a relationship of locomotor ataxia with antecedent syphilitic infection, many others, including Dr. Wilhelm Erb of Germany, do not.

Dr. Brayton's recommended treatment for syphilis in 1888 was the injection of 1½ grains of calomel deep into the gluteal muscles once a fortnight for half a year. With his wry sense of humor he states that "the smitten worshippers of Venus early invoke the mercies of Mercury and the god rarely fails to come to their aid." Many of those for whom the god failed ultimately found their way into a state mental hospital. The illustration is one such example.



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WHAT'S NEW?

Eastman Kodak Company announces a new line of easy-to-use, rapid tests for physicians' offices for pregnancy and various infectious diseases that contain both positive and negative controls, a distinct advantage to assure reliability of results. Under the tradename SureCell, the new tests—for pregnancy, chlamydia, gonorrhea, herpes, HIV (the causative agent for AIDS) and strep A—yield results in three to fifteen minutes, depending on the test. Pregnancy and strep A results are available in three to five minutes, sexually transmitted diseases in five to fifteen minutes.

Color coding of eye medicine is the latest thing originated by the American Academy of Ophthalmology. Color will aid the patient, who is often suffering from poor eyesight, to distinguish eye medications as to the identity of each prescription and to distinguish the eye medicine from the patient's other medications. The tops of various eye drops containers will be coded. Manufacturers of eye medications are cooperating. A variety of small bottles, all with white caps, once resulted in a patient dropping a glue-like product in one eye.

The American Academy of Family Physicians has published and will sell for \$20 to non-members, a book of guidelines for the selection of office computer systems. Included is advice and education about computers and medical software. Also, points to ponder when evaluating vendors and hardware. And, advice on recommended elements for patient billing and medical records.

A radioactive element, gadolinium-153, produced in the Fast Flux Test Facility at Hanford, is now being distributed internationally for use in fighting osteoporosis. The product's sole use is to serve as the irradiation source in an advanced dual photon bone-scanning machine which will detect the onset of osteoporosis and monitor the effectiveness of various treatment methods.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Brentwood Instruments announces a non-invasive method of determining a patient's ability to actually absorb and carry oxygen. The device is especially for physicians' offices. The name is Brentwood's Model IVA Pulse Oximeter. Useful to diagnose and or quantify the effects of treatment on lung disease and other respiratory problems.

Hoechst-Roussel announces receipt of FDA approval for marketing streptokinase for intravenous use in treating acute myocardial infarction. The brand name is Streptase®. The intravenous route will make it possible to deliver the clot-dissolver in the coronary vessels one hour sooner than is possible when the drug is injected into the artery directly from a cardiac catheter.



The Dosimeter Corporation has a direct reading pencil-sized radiation dosimeter which can be read immediately and does not require development. It measures gamma and X-rays immediately, thus making it possible to identify the exposure which released the radiation.

The Neutrogena Corporation has introduced a new, gentle skin cleanser formulated specially for patients who are receiving aggressive acne therapy. Neutrogena® Extra Mild Acne-Skin Cleanser™ has a glycerin-enriched emolient base for gentle cleansing that won't exacerbate skin already overdried by acne therapy. The superfatted liquid formula is nonmedicated and nonirritating. It rinses clean—leaving virtually no residue to interfere with topical treatment.

The United Metal Fabricators have introduced the 5000 Power Examination Table with "one touch" electronics. With just one touch this table will assume any of six user-programmed examination positions. An infinite number of alternative positions can also be achieved by using buttons that control specific adjustable functions of the table.

Mentor Corporation announces FDA approval for marketing the company's new GFS Penile Prosthesis with Resipump. This new prosthesis is a two-piece design which combines reservoir and pump, thereby eliminating abdominal surgery as part of implantation. The prosthesis is characterized as easier for the patient to operate and simpler for the surgeon to implant.

Hewlett-Packard announces a full-disclosure capability for its ambulatory ECG system. The new HP 43405A memory module is an optional, complete-capture product providing 24 hours of single-channel ECG data in battery-protected, solid-state memory. This new memory module is the most recent enhancement to the HP 43420A ambulatory ECG system, first introduced in 1986.

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FUTURE FILE

Practice Workshop

The AMA's "Starting Your Practice" Workshop will be sponsored by the Indiana State Medical Association in cooperation with the Resident Medical Society on February 5 and 6, 1988 at St. Francis Hospital in Indianapolis. Residents and other physicians entering private practice are urged to attend. The workshop will give updates on corporate and health law in Indiana. Other topics included will be patient relations, accounting systems, personnel procedures, third-party payers and medical records.

For registration information for the workshop, call ISMA headquarters at 925-7545 or 800-382-1721.

Women's Health Care

The Scott & White Clinic will conduct a CME course, "Highlights in Women's Health Care," March 16 to 19, in Orlando, Florida. CME credit is 18 hours. The fee is \$300.

The correspondent is Susan Larson, Scott and White CME Office, Temple, Texas 76508—(817) 774-4083.

Specialty Medicine

"Assessment of Clinical Competence in Specialty Medicine" is the title of a Conference for Medical Educators by the Royal College of Physicians and Surgeons of Canada and the American Board of Medical Specialties on March 17 and 18 at the Toronto Hilton Harbour Castle Hotel, Toronto, Canada.

For full information write to: Registration, ABMS, One Rotary Center, Suite 805, Evanston, Ill. 60201.

Cancers of the Skin

World Congress III on Cancers of the Skin will be held March 7 to 9 at The Lincoln Hotel Post Oak, Houston, Texas.

For program and other details write to: Conference Services—HMB Box 131, M. D. Anderson Hospital and Tumor Institute, 1515 Holcombe Blvd., Houston, Tex. 77030.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Indiana University CME

Jan. 25-27: Update Workshop in Echocardiography: Stress Echocardiography, Exercise Doppler, Digital Echocardiography, Registry Resort, Scottsdale, Ariz.

Feb. 11: Current Concepts in Management of Diabetes Mellitus, Reid Memorial Hospital, Richmond.

Feb. 25: Dilemmas of Dementias, Evansville Center for Medical Education, Evansville.

For further information, please contact Melody Dian, CME, (317) 274-8353.

Leadership, Management

The National Conference on Health Care Leadership and Management, sponsored by the American Academy of Medical Directors, will be held May 5 to 7, at The Sheraton Harbor Island, San Diego, California.

The correspondent is Sherry Mason, AAMD, 4830 W. Kennedy Blvd., Suite 648, Tampa, Florida, 33609—(813) 287-2000.

Tuberculosis Update

A tuberculosis update conference will be conducted Jan. 27-28 at the Radisson Plaza Hotel, Indianapolis.

The conference is aimed at physicians specializing in pediatrics, geriatrics, pulmonary diseases, family practice and infectious diseases. It is being sponsored by the American Lung Association of Indiana and the Indiana Thoracic Society. AMA CME credit will be available.

For more information, contact the ALA of Indiana, 8777 Purdue Road, Suite 310, Indianapolis 46268—(317) 872-9685.

Family Practice Review

"Family Practice - 1988 Twelfth Annual Spring Refresher and Board Examination Review" will be conducted March 22-26 at the Towsley Center, University of Michigan, Ann Arbor. The course offers 33.75 credits in Category I of the Physicians Recognition Award. Contact Gayle Fox, Office of CME, Towsley Center-Box 0201, Michigan Medical School, Ann Arbor, Mich. 48109—(313) 763-1400.

Primary Care Update

"The Second Annual Update on Primary Care" is the title of an educational seminar to be conducted by the Dept. of Pediatrics, Loyola University Stritch School of Medicine at The Ranch in Steamboat Springs, Colo., March 14-18.

Contact Larry G. McLain, M.D., Dept. of Pediatrics, Loyola University Medical Center, 2160 S. First Ave., Maywood, Ill. 60153—(312) 531-3195.

Medical-Legal Issues

"Current Medical-Legal Issues in Indiana" will be the subject of the 5th annual SIMBA South seminar, to be held during spring break (March 28-April 1, 1988).

The seminar is offered by Seminars for Indiana Medico/Legal Bar Association (SIMBA), Indianapolis. Faculty will include well known Indiana physicians and attorneys. Tuition is \$350. CLE and CEU credits can be earned.

For more information, call (317) 871-6222 or write SIMBA South V, 8402 Harcourt Road, Suite 220, Indianapolis 46260.

Pathology

The annual meeting of the U.S. and Canadian Academy of Pathology will be held Feb. 28 to March 4, 1988, at the Washington Hilton, Washington, D.C.

For more information, contact Dr. Nathan Kaufman, Bldg. C, Suite B, 3515 Wheeler Road, Augusta, Ga. 30909—(404) 733-7550.

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WARNINGS

- Cardiac Conduction.** CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (six of 1,243 patients for 0.48%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.
- Congestive Heart Failure.** Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt). Experience with the use of CARDIZEM alone or in combination with beta-blockers in patients with impaired ventricular function is very limited. Caution should be exercised when using the drug in such patients.
- Hypotension.** Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.
- Acute Hepatic Injury.** In rare instances, significant elevations in enzymes such as alkaline phosphatase, CPK, LDH, SGOT, SGPT, and other symptoms consistent with acute hepatic injury have been noted. These reactions have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in most cases, but probable in some. (See PRECAUTIONS.)

PRECAUTIONS

General. CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any new drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies,

oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes, however, these changes were reversible with continued dosing.

Drug Interaction. Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)

Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated. Available data are not sufficient, however, to predict the effects of concomitant treatment, particularly in patients with left ventricular dysfunction or cardiac conduction abnormalities. In healthy volunteers, diltiazem has been shown to increase serum digoxin levels up to 20%.

Carcinogenesis, Mutagenesis, Impairment of Fertility.

A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in *in vitro* bacterial tests. No intrinsic effect on fertility was observed in rats.

Pregnancy. Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.

There are no well-controlled studies in pregnant women; therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded.

In domestic placebo-controlled trials, the incidence of adverse reactions reported during CARDIZEM therapy was not greater than that reported during placebo therapy.

The following represent occurrences observed in clinical studies which can be at least reasonably associated with the pharmacology of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The most common occurrences as well as their frequency at presentation are: edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%). In addition, the following events were reported infrequently (less than 1%):

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Cardiovascular:	Angina, arrhythmia, AV block (first degree), AV block (second or third degree — see conduction warning), bradycardia, congestive heart failure, flushing, hypotension, palpitations, syncope.
Nervous System:	Amnesia, gait abnormality, hallucinations, insomnia, nervousness, paresthesia, personality change, somnolence, tinnitus, tremor.
Gastrointestinal:	Anorexia, constipation, diarrhea, dysgeusia, dyspepsia, mild elevations of alkaline phosphatase, SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase.
Dermatologic:	Petechiae, pruritus, photosensitivity, urticaria.
Other:	Amblyopia, dyspnea, epistaxis, eye irritation, hyperglycemia, nasal congestion, nocturia, osteoarthralgia pain, polyuria, sexual difficulties.

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme, and leukopenia. However, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established.

Issued 9/86

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Polymyalgia Rheumatica and Giant Cell Arteritis

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Supported in part by grants from the National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases (AR 20582 and AM 7448) and awards from the Arthritis Foundation and the Grace M. Showalter Trust.

POLYMYALGIA RHEUMATICA (PMR) and giant cell arteritis (GCA) appear to be two distinct, yet closely related conditions.¹ However, some researchers maintain that PMR and GCA are different manifestations of the same disease. They occur in the same patient population and both disorders frequently coexist in the same patient. PMR is a clinically defined syndrome without any tissue abnormalities upon histologic examination. GCA, while often recognized on the basis of the clinical picture, has histologic features which are diagnostic.

Polymyalgia Rheumatica Introduction and Epidemiology

PMR is a syndrome, defined by the presence of symmetric proximal muscle aching and stiffness, typically involving the pelvic and shoulder girdles. The Westergren erythrocyte

sedimentation rate (WESR) is higher than 50 mm/hr in more than 95% of untreated patients, and it is often greater than 100 mm/hr. Common systemic features of PMR include fever, weight loss, fatigue, depression and anemia. Other potential causes of these signs and/or symptoms, such as rheumatoid arthritis, systemic lupus erythematosus, myositis and cancer, must be ruled out before the diagnosis of PMR can be made. Thus, PMR is a diagnosis of exclusion. All features of PMR respond promptly and dramatically to low doses of corticosteroids.²

PMR is a disease of the elderly and almost never occurs before the age of 50 years. The annual incidence is 54/100,000 in people over the age of 50 years.³ The median age of onset is 70 years. The prevalence in blacks is only about 15% of that in whites. PMR is twice as common in women as in men.

Signs and Symptoms

The onset of PMR usually is insidious, with symptoms developing gradually, over weeks to months. Characteristically, patients are in good health prior to the development of bilateral proximal muscle aching. Stiffness is typically greater than 30 minutes in duration and is most prominent after periods of inactivity, particularly upon arising in the morning. Muscle pain is exacerbated by movement, but is significant also at rest. In contrast to inflammatory muscle disorders, such as polymyositis, muscle strength in PMR is characteristically normal. Strength may be difficult to assess, however, because of the muscle pain. PMR is a systemic disease and 50% of patients manifest low-grade fever, weight loss, fatigue, signs of depression or anemia (Table 1).^{1,3}

In some series, over 95% of patients with PMR have synovitis. The joint disease is often subclinical and, thus, may be detected only by increased synovial uptake of technetium pertechnetate on a bone scan.⁴ Shoulders, wrists, knees, small joints of the hands and sternoclavicular joints are most commonly affected. Bony erosions on x-ray are rare.

Synovial fluid analysis, performed on the rare patient who has an effusion that is sufficiently large to permit joint aspiration, indicates the inflammatory nature of the synovitis. The synovial fluid leukocyte count in PMR is 1000-8000 WBC/mm³ (normal \leq 150 WBC/mm³), with 40-50% neutrophils (normal \leq 25% neutrophils). This low-grade inflammatory synovitis may, in fact, be the cause of aching in this disease.^{5,6} It has been suggested that a better term for this disease would be *polyarthralgia rheumatica*.

Relationship of PMR to Rheumatoid Arthritis

In a significant number of patients in whom the diagnosis of PMR has been made, rheumatoid arthritis subsequently develops. The converse is also true. In a study of 96 patients with

PMR, 11 eventually developed typical rheumatoid arthritis.³ In six others, rheumatoid arthritis resolved prior to the onset of PMR. By definition, however, the diagnosis of active rheumatoid arthritis excludes the concurrent diagnosis of PMR.

Relationship of PMR to GCA

PMR and GCA occur in the same patient population. In some studies from Scandinavia, temporal artery biopsy showed evidence of GCA in up to 40% of patients with PMR who had *no* clinical features of GCA. In contrast, in studies from this country the frequency of biopsy evidence of GCA in patients who, on clinical grounds, have "pure" PMR is much lower. Although blindness is a major complication in patients who have symptoms of GCA (see below), the prevalence of visual loss in patients with "pure PMR" appears to be less than 1%.

Approximately 15% of all patients with PMR develop clinical evidence of GCA. In such cases, GCA is recognized, on average, 11 months after the diagnosis of PMR has been established. About 40% of all patients with GCA have coexistent PMR. Thus, all patients with PMR must be monitored regularly for development of symptoms of GCA.

Histology

There are no characteristic histologic features of PMR. Muscle biopsy is usually normal, but may show non-specific type II muscle atrophy. Synovial biopsy, however, may reveal infiltration of a hyperplastic synovium with lymphocytes and plasma cells (see above).

Laboratory Features

The WESR is characteristically greater than 100 mm/hr in PMR. Rarely, a patient will have a WESR in the normal range. A pragmatic point should be made concerning interpretation of the WESR in the elderly, however; although an elevated WESR is a very important diagnostic

criterion, the WESR normally rises with age. Thus, 15-20% of healthy individuals over the age of 60 years will have a WESR of 40 mm/hr or greater.

Patients with PMR typically have a normochromic, normocytic anemia, decreased serum albumin concentration, and an increased serum level of alpha₂ globulin. Some 30% have abnormal liver function tests. In particular, the serum alkaline phosphatase may be elevated. The serum creatine phosphokinase and aldolase, tests reflecting muscle disease, are not elevated. Renal function tests are also unaffected.¹ Although serum tests for antinuclear antibody and rheumatoid factors are not affected by PMR, about 25% of normal elderly people have a positive antinuclear antibody test and some 10% have a positive serum rheumatoid factor test.

Diagnosis

PMR is a diagnosis of exclusion. The diagnosis is made on the basis of the typical clinical presentation and is supported by the presence of a markedly elevated WESR, with a normal serum creatine phosphokinase. Marked resolution of symptoms within 1-2 days after initiation of corticosteroid therapy is an additional diagnostic criterion.

The most common entities in the differential diagnosis of PMR include depression, cancer, fibromyalgia, the seronegative spondyloarthropathies, rheumatoid arthritis, systemic lupus erythematosus, hypothyroidism, hyperthyroidism, viral infection and polymyositis.

Treatment

Standard therapy of PMR consists of prednisone, 10-20 mg daily, in divided doses.⁸ The response is dramatic and diagnostic. Patients who, prior to treatment, were bedridden because of pain and stiffness, often become asymptomatic within 24 hours. Indeed, if striking clinical improvement does not occur within 48-72 hours after institution of steroid treatment, the

TABLE 1
Frequency of Clinical Features in Polymyalgia Rheumatica and Giant Cell Arteritis

Condition	Prevalence			
	>75%	25%-75%	5%-25%	< 5%
Polymyalgia Rheumatica	muscle aching/ stiffness of shoulders and/or hips peripheral pain and weakness	malaise, fatigue or weakness muscle aching/stiffness in neck, upper arms, thighs or torso other musculoskeletal pain	weight loss anorexia fever synovitis depression	joint erosions on x-ray
Giant Cell Arteritis	any symptom related to arterial involve- ment	weight loss malaise, fatigue or weakness other musculoskeletal pain headache jaw claudication tender nodular arteries decreased pulse or bruit	synovitis visual abnormal- ities claudication on swallowing CNS abnormal- ities sore throat	limb or tongue claudication pulmonary, renal or cardiac involvement

diagnosis of PMR is probably incorrect.

Reduction of the daily dose of corticosteroid should begin once symptoms have been alleviated—usually after five to seven days of therapy. The rate at which the dose is tapered is guided primarily by the patient's symptoms. Although some studies suggest that only a brief duration of treatment of PMR is adequate, in others⁹ a median duration of therapy of three years was required.

In patients receiving a daily maintenance dose of corticosteroids and in the absence of a recurrence of symptoms, an elevated WESR does not indicate a need to increase the dose of steroids. To avoid side-effects of corticosteroids, treatment with anti-inflammatory doses of salicylates or other nonsteroidal, anti-inflammatory drugs (NSAIDs) may be considered in patients with mild symptoms. However, the majority of patients with PMR do not respond satisfactorily to NSAIDs and require corticosteroids. In those in whom salicylates or other NSAIDs are effective, the response is much slower (typically two to three

weeks, or longer) than that seen after institution of treatment with corticosteroids.

Giant Cell Arteritis Introduction and Epidemiology

GCA is a vasculitis of medium-sized and large arteries. It is characterized histologically by infiltration of the arterial wall with multinucleated giant cells. Like PMR, GCA is a disease of the elderly. The annual incidence of GCA is approximately 4-17 per 100,000 people 50 years of age and older. GCA is distinctly uncommon in blacks. Blindness is the most common serious sequel of GCA and is usually preventable by prompt institution of corticosteroid therapy. Once blindness occurs, however, it is rarely reversible.^{10,11}

Signs and Symptoms

Headache is the first manifestation of GCA in over 30% of patients. In 25%, PMR is the initial manifestation. Fever or other systemic signs are the presenting feature of GCA in 20%, visual abnormalities without visual loss in 7%, and visual loss in 1%. The re-

mainder of patients with GCA usually present with symptoms of claudication in areas supplied by involved arteries (Table 1).^{12,13} Most symptoms of GCA can be related directly to sites of active arteritis.

Headaches in GCA are often boring in quality and are localized to areas along the arteries of the scalp. Examination may reveal nodularity, thickening or tenderness of these vessels, particularly the temporal and occipital arteries. Patients with GCA may experience severe headaches with clinically normal arteries and headaches may resolve despite ongoing arteritis.

In any patient over the age of 50 who experiences the new onset of headache or describes a recent change in the character of preexisting headaches, a WESR should be performed. If the WESR is greater than 50 mm/hr, a diagnosis of GCA should be strongly considered.

The most common serious sequelae of GCA are visual abnormalities, which develop in about 30% of patients. Fifty percent of these patients will suffer permanent visual loss. Examination of

the optic fundus is frequently normal, but cotton wool patches or retinal hemorrhages are seen occasionally. As the disease progresses, ischemic optic neuritis may develop.

Fortunately, transient episodes of blindness (amaurosis fugax) and/or blurred vision usually occur as warning signs before permanent blindness develops.¹³ These symptoms suggest the *urgent* need for treatment with corticosteroids. In patients with unilateral blindness such therapy can prevent involvement of the contralateral eye, which will otherwise occur in about 50%.¹² GCA has a predilection for vessels originating from the aortic arch, but any artery can be involved. Extracranial arteries, e.g., the superficial temporal, vertebral, ophthalmic and posterior ciliary arteries are most often affected. Less commonly, the carotid and central retinal arteries are involved.

Intermittent claudication, fatigue, or pain with use may occur in muscles supplied by the diseased arteries in GCA. Claudication of the muscles of mastication (i.e., pain in the jaw with chewing) is reported more frequently than claudication at any other site, and is almost pathognomic for GCA. Occasionally, claudication of the tongue or muscles of deglutition causes dysphagia or odynophagia. Upper extremity claudication is highly suggestive of GCA. Physical findings include a diminished pulse amplitude or bruits, typically involving the carotid, subclavian, axillary or brachial arteries. Necrosis and ulceration of the tongue, scalp or extremity may occur.

GCA can present as a fever of unknown origin. Forty-two percent of patients with GCA at the Mayo Clinic had a temperature of 101°F or higher at some time during their illness.¹⁴ Fifteen percent presented as a fever of unknown origin, but most had symptoms referable to arteritis. In GCA the white blood cell count and differential are usually normal, despite the markedly elevated WESR.

Ginsberg, *et al*¹⁵ identified 19 elderly

patients with an erosive, inflammatory arthritis who satisfied the diagnostic criteria for rheumatoid arthritis and had coexistent GCA. These patients had negative tests for rheumatoid factor (which would be expected to be positive in some 80% of patients with rheumatoid arthritis). Synovial biopsy in one patient demonstrated giant cells, a feature not characteristic of rheumatoid arthritis.

These patients probably had pure GCA with unusual clinical features, or PMR and coexistent GCA with marked joint involvement, rather than rheumatoid arthritis plus GCA. They illustrate the variable presentation of GCA and the difficulty which exists occasionally in distinguishing it from PMR or from rheumatoid arthritis.

Cardiorespiratory sequelae occur in a small proportion of patients with GCA.^{16,17} These patients may have a nonproductive cough or a sore throat associated with esophageal hyperemia. They may have hoarseness, glossitis or a sensation of choking. Coronary arteritis with angina or myocardial infarction has been described.¹⁸ Aortic valvular insufficiency and aortitis with dissection and rupture also occur rarely in GCA.¹⁸⁻²⁰ Up to 15% of patients with GCA have central nervous system involvement, with mental status changes, thought disorders, cranial nerve palsies or stroke.¹³

Differential Diagnosis. A variety of systemic vasculitides, including hypersensitivity angitis, Wegener's granulomatosis, polyarteritis nodosa and Takayasu's arteritis can mimic GCA. All of these entities are uncommon, however.

Diagnosis. The definitive diagnostic test for GCA is biopsy of an artery. Preferably, the artery selected for biopsy should be readily accessible and should supply an area that is symptomatic. Usually, the temporal artery or, less commonly, the occipital artery, is taken for examination. As large a segment of the temporal artery as

possible (at least 3-5 cm) should be removed from the symptomatic side and multiple frozen sections should be examined. If these are negative, the contralateral temporal artery should be removed and examined.²¹ Multiple sections of fixed tissue should be examined microscopically, since the length of the abnormal segment may be as small as 330 microns.²²

As noted above, some patients with "pure" PMR and no clinical features of GCA may show changes of GCA on temporal artery biopsy. However, in view of the very low risk of blindness in such patients, there is no clinical indication for "routine" temporal artery biopsy in patients with "pure" PMR.

The yield of positive results may diminish when artery biopsy is performed after initiation of corticosteroid therapy. However, in the symptomatic patient, therapy should *not* be delayed until the biopsy can be performed. Treatment should be implemented *immediately*, and the biopsy should then be obtained as soon as possible. When involvement of a large artery (e.g., aorta or carotid artery) is more apparent than involvement of medium-sized vessels, angiography may be the most appropriate initial diagnostic procedure.

Adverse effects from temporal artery biopsy are uncommon and include superficial wound infection, bleeding and keloid formation. Cosmetically, the results are usually very satisfactory.

Histology

GCA is characterized pathologically by patchy infiltration of the walls of medium and large-sized arteries with lymphocytes, eosinophils, histiocytes and multinucleated giant cells. Destruction of the internal elastic lamina is often noted. Notably, giant cells may be absent (Figure 1) and are not required for the diagnosis of GCA. Inflammation often is segmental, with areas of normal artery interposed ("skip lesions"). Thrombosis occurs in areas of active inflammation.

Laboratory Features

As in PMR, the WESR in GCA is characteristically over 100 mm/hr. A normochromic, normocytic anemia, decreased serum albumin level and elevated serum α_2 globulin concentration are common. The creatine phosphokinase, aldolase and renal function tests are unaffected.¹

Treatment

Treatment for GCA should be instituted *immediately* in symptomatic patients who are strongly suspected of having GCA. Initiation of therapy should *not* await confirmation of the diagnosis by arterial biopsy, particularly if visual abnormalities are present. In this situation, prednisone, 60 mg daily, in two-to-three divided doses, is appropriate. Even if symptoms resolve promptly, tapering of the corticosteroid dose should not begin for three to four weeks, or until the symptoms have stabilized for this length of time, whichever is longer.

The rate at which the corticosteroid dose is tapered in GCA should be guided primarily by clinical manifestations of the disease. Less emphasis should be placed on the WESR.²³ There is no need to attempt to maintain the WESR in the "normal" range (less than 20 mm/hr), since at least 20% of patients in the age group affected by GCA normally have a WESR from 40-50 mm/hr. In general, one should not decrease the steroid dose by more than 10% of the total dose every 10-14 days. Many patients who have been considered to respond poorly to treatment have undergone excessively rapid reduction in the steroid dose.²⁴

The median duration of therapy for GCA is 11 months, and in about 80% of patients corticosteroids can be discontinued within two years after treatment is begun. Recently, however, the need for more prolonged treatment in some patients with GCA has been emphasized, and over 50% of patients in one study (25) required more than five years of therapy. Recrudescence of disease is unpredictable and should



FIGURE 1: Typical histologic features of a temporal artery biopsy in GCA. The letter "L" denotes the arterial lumen. A giant cell is located at the tip of the large arrow. The three smaller arrows demonstrate disruption of the internal elastic lamina. The intima and media are infiltrated with inflammatory cells.

be treated by reinstitution of corticosteroid therapy at a dose of 60 mg daily.

Alternate day corticosteroid therapy is generally ineffective in GCA.²⁶ While daily corticosteroid treatment almost always suppresses GCA, it may be associated with significant side effects in the elderly population affected by this disease. A recent study of patients with GCA who were treated with prednisone disclosed a disturbingly high rate of side effects.²⁷ Thirty-three percent suffered vertebral or hip fractures, 16% incapacitating myopathy, 16% major psychiatric dysfunction, 10% gastrointestinal bleeding and 10% insulin dependent diabetes mellitus. Five patients developed severe infections and four died of overwhelming sepsis.

Alternative and experimental therapies, including azathioprine, cyclophosphamide or cyclosporin, have significant toxicity and rarely are indicated. The toxicity of treatment of GCA underscores the need for accurate

diagnosis and for a clear understanding of the therapeutic objectives.

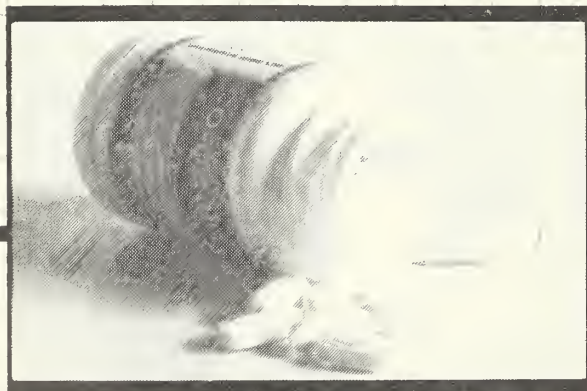
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I. Shock in the Pediatric Patient



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THIS ARTICLE begins a two-part discussion of shock in the pediatric patient. This first part will cover classification, diagnosis and a brief overview of the pathophysiology of shock as they relate to the pediatric patient. In a future issue of INDIANA MEDICINE, a rational approach to the monitoring aspects and therapy of shock will be presented.

Shock is normally defined by a numerical value of blood pressure, either a definite value or a level below a patient's normal resting blood pressure. This, however, is too simplistic as shock can be present in the face of normal blood pressure, and hypotension can exist without shock. A better definition is based on the physiology of the shock state, that is, an acute state of circulatory dysfunction resulting in failure of the cardiovascular system to supply sufficient nutrients and oxygen to satisfy the needs of body tissues.

Classification of Shock

Hypovolemic shock is the most common type occurring in the pediatric age group. It is caused by a decrease in circulating blood volume. The etiology can be similar to that seen in adults, including hemorrhage from trauma or gastrointestinal bleeding, plasma loss due to burns, or third space losses from intestinal obstruction. The cause also can be unique to pediatrics such as diarrhea or vomiting, which rarely cause shock in adults. Other pediatric causes include sequestration crisis in

sickle cell anemia, intracranial bleeding (which can produce shock in very small infants), or excessive sweating in cystic fibrosis patients.

Cardiogenic shock is less common in children than in adults. Etiologies include dysrhythmias, congenital organic acidemias, drug intoxication, hypothermia, trauma with pericardial effusion or myocardial contusion, or congenital heart disease, especially those lesions with outflow tract obstruction such as aortic stenosis, coarctation of the aorta or hypoplastic left heart.

A third type of shock is *distributive* shock, caused by abnormalities in the distribution of blood flow resulting in profound inadequacies in tissue perfusion. Etiologies include anaphylaxis, central nervous system injury, drug intoxication and, most frequently, sepsis. Organisms most commonly associated with septic distributive shock in children are gram negative bacteria such as *H. influenzae* or *N. meningitidis*, though the syndrome can occur from infection with gram positive bacteria, fungi, rickettsiae or viruses. Table 1 lists the most common causes of shock in children.

Pathophysiology

In hypovolemia, the early or compensated phase of shock is characterized by decreased blood volume and decreased cardiac chamber filling volumes. This produces a decrease in preload, stroke volume and cardiac output. The heart rate reflexly increases as does systemic vascular resistance as the body attempts to maintain cardiac output and blood pressure. As volume loss progresses this ability to compensate is overwhelmed, resulting in severe vasoconstriction and ischemia to visceral and cutaneous circulations. The child eventually shows signs of organ underperfusion such as hypoten-

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sion, anuria and lethargy.

In cardiogenic shock, increased vascular tone will help maintain adequate blood pressure to the vital organs, but also will increase left ventricular work. This causes myocardial oxygen requirements to increase in a heart that is already impaired. Cardiac filling pressures rise as the heart's capacity to pump is diminished.

In distributive or septic shock a myriad of circulatory and metabolic dysfunctions combine to produce the syndrome of decreased oxygen and substrate utilization, and progressive acidosis despite seemingly normal heart rate and cardiac output. The sequence of events that produces the syndrome is not completely clear, but it appears that a bacteremia of the offending organism causes the liberation of, first, vasoactive substances (prostaglandins, serotonin, endorphins, histamine); second, substances that affect myocardial performance (myocardial depressant factor); and third, substances that initiate activation of complement and clotting cascades. The net effect is unregulated vasodilation, vasoconstriction and microscopic clotting that produces a mismatch of blood flow and oxygen requirements at the arteriolar level, and a probable block of substrate utilization at the mitochondria. The clinical picture is then one of decreased oxygen utilization and progressive organ dysfunction.

Whatever the etiology of the shock state, several sequelae are commonly observed. Progressive ischemia produces organ failure. Liver and kidney function are compromised. Pulmonary function is affected in several ways. Work of breathing is increased as the patient increases minute ventilation in an effort to compensate for the metabolic acidosis. A syndrome of capillary leak or increased pulmonary vascular pressure produces extravascular lung water causing hypoxemia. Capillary leak occurs throughout the body so that it is common to find a patient requiring fluid administration who is still hypotensive despite having peripheral

TABLE 1
Common Etiologies of Shock in the Pediatric Patient

Hypovolemic

Diarrhea
Vomiting
Trauma
Burns
Post-surgery
Intestinal obstruction
Gastrointestinal bleeding
Intussusception
Esophagitis
Gastritis
Varices
Duodenal ulcer
Gangrenous bowel
Meckel's diverticulum
Henoch-Schonlein purpura
Renal losses
Heat Stroke

Distributive

Sepsis
Group B streptococcus
Listeria monocytogenes
Staphylococcus aureus
Streptococcus pneumoniae
Hemophilus influenzae
Neisseria meningitidis
Fungus
Rickettsiae
Virus
Anaphylaxis
Antibiotics
Insect stings
Foods
Drugs
Barbiturates
Tranquilizers
Antihypertensives
Neurologic injury

Cardiogenic

Congenital heart disease
Infectious cardiomyopathy
Drug toxicity
Barbiturates
B-blockers
Kawasaki disease
Trauma

edema. Metabolic abnormalities such as hypocalcemia can result in refractory hypotension, and hypophosphatemia can contribute to respiratory fatigue, decreased myocardial performance, and platelet and leukocyte dysfunction.

A serious sequelae of shock is clotting deficiency secondary to disseminated intravascular coagulation. Microscopic clots form in small blood vessels causing progressive ischemia to organs and extremities, hemolytic anemia and increased susceptibility to large vessel hemorrhage due to clotting factor consumption.

Diagnosis

The early diagnosis of shock in the pediatric patient requires a high index of suspicion, as there are certain etiologic and contributing factors unique to pediatrics. The history is vitally important. Special attention should be paid to past history for underlying congenital disease or anomalies (especially of the heart) and to the history of present illness for the possibility of toxic ingestion or exposure. Details of the duration of illness as well as the parents' perception of feeding difficulty, volume of fluid taken, and frequency and amount of urination over the previous 24-48 hours should be obtained. Equally important is the child's level of activity, with lethargy being more ominous than fussiness or irritability. Triage personnel in emergency rooms and physicians' offices should be alert to the key signs and symptoms of frequent vomiting and diarrhea, infrequent urination and lethargy. Children with the above should be promptly evaluated even in the absence of fever. A parent's history should be considered reliable and their description of fluid intake and level of activity, fever, etc., should be taken as accurate.

Physical examination centers around signs of decreased organ perfusion. Common physical findings in early and late stages of shock are outlined in

TABLE 2
Physical Findings of Shock in the Pediatric Patient

<u>Hypovolemic/Cardiogenic:</u>	<u>Septic:</u>
<u>Early (compensated)</u>	<u>Early</u>
Tachycardia	Tachycardia
Tachypnea	Tachypnea
Normal blood pressure	Fever
Normal neurologic status	Warm extremities
Pale, cool extremities	Bounding pulses
	Normal capillary refill
	Wide pulse pressure
	Mild confusion
	Normal urine output
<u>Late (uncompensated)</u>	<u>Late</u>
Tachycardia	Tachycardia
Tachypnea	Respiratory depression
Hypotension	Hypothermia
Oliguria/anuria	Pale, cool extremities
Lethargy/coma	Decreased pulses
Mottled skin	Oliguria hypotension
	Lethargy/coma

Table 2. Level of activity is important, as is the child's response to the environment, particularly to parents and medical personnel. Children above the age of about six months do not separate from parents easily, and a child who seemingly permits frightening or painful procedures is usually more ill than one who aggressively resists examination. The most important finding for the experienced physician is simply put as "looks good versus looks bad." An ill-defined sense of discomfort with the child's appearance on the part of physicians or nurses (or the parent) should be a signal that the child may be truly ill. Other signs of hypovolemia and depressed perfusion include a depressed or sunken anterior fontanel, cool extremities, gray or mottled skin,

delayed capillary refill, weak pulses, poor skin turgor, dry mucous membranes and sunken eyes.

With regard to vital signs, tachycardia and tachypnea are early signs of shock. Small children may show apnea or irregular breathing. Blood pressure is usually preserved until late. Widened pulse pressure is a common early sign of distributive shock, while reduced pulse pressure is common in hypovolemic or cardiogenic shock. Fever, usually important in the diagnosis of infection, is often absent even in shock of infectious etiology. Hypothermia is common in infants and can be a grave prognostic finding as temperature less than 37° C. was associated with 100% mortality in one pediatric septic shock series (Pollack,

below). Laboratory values common to the shock state in children include metabolic acidosis (an arterial blood gas is a must), hypoglycemia, hypocalcemia, increased white blood cell count (or abnormally low in septic infants), decreased platelet count, anemia, prolonged prothrombin and partial thromboplastin times, and hypophosphatemia.

In a child the diagnosis of shock is often especially difficult. The line between dehydration which will respond easily to fluids and shock which may be progressive can be blurred. Careful attention to unique pediatric historical and physical findings is essential, as is prompt transfer or admission to an intensive care unit familiar with the treatment of shock in children, i.e. airway control and assisted ventilation, initiation and maintenance of vascular access and monitoring, and fluid and catecholamine therapy for all ages and sizes of patients.

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RADIOLOGY CLINIC

SECTION EDITOR:

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Cavitary Infiltrate in an Immunosuppressed Patient

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AN 18-YEAR-OLD MAN presented with right anterior chest pain, and a chest radiograph was obtained which showed a cavitary infiltrate. The patient had been given the diagnosis of acute biphenotypic leukemia two months before. He had received daunorubicin, ARA-C, vincristine and prednisone as initial therapy and was in complete remission. Three days prior to presentation he had received consolidation therapy of high dose methotrexate with leukovorin rescue and intrathecal methotrexate. The patient was asymptomatic until the day of presentation when he noted sharp pain in the right anterior chest that was exacerbated by deep breathing. He denied fever, sputum production, hemoptysis and dyspnea.

Physical examination revealed a temperature of 37.5 and a respiratory rate of 20. Examination of the lungs was normal. There was a I/IV systolic ejection murmur at the upper right sternal border. The entrance site and subcutaneous tunnel of a central

venous catheter were clean and non-erythematous. The remainder of the examination was unremarkable.

Admitting laboratory information showed a WBC count of 3,000 with 75% polys, 10% lymphs and 15% bands. Platelet count was 150,000. Room air arterial blood gas showed pH 7.45,

pCO₂ 38 and pO₂ 98.

Admitting CXR demonstrated a nodular infiltrate extending to the pleural surface in the right upper lobe. Central cavitation with prominent air crescent formation was present. A transthoracic needle aspiration biopsy was performed.

Patient's Radiograph on Admission: What Is the Patient's Problem?



(Diagnosis and Discussion on Next Page)

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RADIOLOGY CLINIC

CONTINUED FROM PRECEDING PAGE

Diagnosis:

Invasive pulmonary aspergillosis.

The biopsy specimen revealed clumps of hyphae which were morphologically identified as *Aspergillus*. Cultures subsequently grew *Aspergillus*.

Aspergillus is a soil saprophyte which gains entry into the body through the tracheobronchial tree. Initially there is proliferation of hyphae followed by invasion of surrounding arterioles causing ischemic necrosis. Further invasion of larger arteries leads to areas of pulmonary infarction.¹ Host defense against *Aspergillus* involves two different mechanisms. The first line of defense is the alveolar macrophage that ingests and kills the spores. If spores do germinate and form hyphae, polymorphonuclear neutrophils attach to the hyphae and prevent growth.² Defects in either of these mechanisms puts the patient at risk for developing invasive aspergillosis.

Most cases of invasive aspergillosis occur in patients with either hematologic malignancies or organ transplants. Prolonged granulocytopenia has been shown to be the major risk factor in patients with leukemia.³ High-dose steroid therapy also has been shown to be a predisposing factor. Steroids inhibit the macrophages ability to kill *Aspergillus* spores.

The clinical presentation of aspergillosis is nonspecific with the symptoms often subacute in nature.

The patient may have a nonproductive cough or dyspnea. Pleuritic chest pain may indicate pulmonary infarction. Fever is almost universal among these patients. There are usually few physical findings, although rales and pleural friction rub occasionally are present. Arterial blood oxygen tension is usually relatively well maintained compared to severe bacterial, viral or parasitic pneumonias.⁴

The chest x-ray is abnormal in at least 75% of early aspergillosis. Early lesions consist of single or multiple nodules. These lesions may progress to diffuse bilateral infiltrates. Individual lesions also may enlarge and cavitate with characteristic air crescent formation. Extension of lesions into wedge-shaped densities extending to the pleural surface indicates pulmonary infarction. Early CT evaluation has shown a zone of lower attenuation surrounding parenchymal nodules which may be suggestive of aspergillosis.⁵

Definitive diagnosis of aspergillosis requires demonstration of fungus within tissue. This can be made by transbronchial biopsy, open-lung biopsy or fine-needle aspiration. Sputum culture is an insensitive test for aspergillosis. In proven aspergillosis, *Aspergillus* grows in less than 10% of cases. Cultures also are positive in up to 10% of normal individuals. Serology is generally unhelpful because of high false negative results.⁶

Treatment of aspergillosis consists of intravenous Amphotericin B in a total dose of 400-3000 mg given over 6-8 weeks.⁶ Therapy is most successful when the underlying immune defects

can be corrected. Steroid and cytotoxic therapy should be reduced, if possible. Surgical resection of individual lesions is a consideration in select cases.

Prognosis remains poor for aspergillosis in patients with hematologic malignancy with mortality approaching 70% in some series. Recent studies demonstrate improved survival rates with early diagnosis and aggressive Amphotericin B therapy.⁷

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Fallopian Hydatidiform Mole: A Case Report

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Indianapolis

THE FREQUENCY OF ectopic pregnancy has been variously expressed as 41 per 100,000 in 14-44 year-old females,¹ one per 300 pregnancies,² and 0.5-3% of deliveries.³

The incidence of hydatidiform mole, on the other hand, exhibits a wide geographic variation, estimated in the United States to be one in 2,000 pregnancies,⁴ compared to as many as one in 100-200 in Southeast Asia.⁵ In light of these figures, it is not surprising that ectopic (tubal) mole is rare. Review of the literature reveals only 23 cases reported since 1941.² This report presents an additional case.

Case Report

A 27-year-old, black multigravida (G₄P₃Ab₁) appeared in the emergency room about 13 to 14 weeks after her last normal menstrual period with a complaint of vaginal bleeding of six days' duration associated with intermittent sharp right lower quadrant pain. The symptoms were more pronounced during the last two days prior to consultation.

She had seen a physician two weeks before the onset of bleeding, and examination revealed a six-week sized uterus and the urine slide test for pregnancy was positive. Past medical

and surgical history revealed laparoscopic tubal ligation done two years earlier and spontaneous abortion with dilatation and curettage a few months before that.

She was on no medications and knew of no allergies. At the time of admission, the patient had a temperature of 98°, pulse rate 88 beats/minute, respiratory rate 18/minute, and blood pressure 104/80 mmHg. Her hemoglobin was 13 grams/dl, hematocrit 38%, and leukocyte count 5,200. Results of serum and urine pregnancy tests were positive. The patient was in moderate distress.

Upon examination, diffuse guarding was noted, although more prominent in the lower quadrants with bilateral direct, but not rebound, tenderness. Bowel sounds were present, but fetal heart tones were not detected. Speculum examination showed bright-red blood in moderate amounts present in the vaginal canal.

Bimanual palpation revealed a normal-sized, slightly retroflexed uterus with a closed, but tender, parous cervix. Both adnexae were extremely tender, but no masses were appreciated.

Ultrasonography, performed to determine the presence of either ectopic pregnancy or a ruptured ovarian cyst, revealed an approximately 1.7 cm intrauterine gestational sac, evidence for a very early intrauterine pregnancy. In addition, there was a large amount of fluid in the pelvis, with some posterior layering of echoes suggestive of bleeding.

No fetal heart motion was detected. Culdocentesis yielded 30 cc of non-clotting blood. Because of this discrepancy, i.e. a positive tap and evidence of a uterine pregnancy, the

patient was observed overnight with serial hemoglobin determinations that progressively dropped from 13 g/dl down to 10.6 the following morning.

An exploratory laparotomy was then performed. Approximately 100 cc of free, dark-red blood was noted in the peritoneal cavity at that time. The right fallopian tube revealed a ruptured ectopic pregnancy in the proximal portion of the distal segment past the separated area of tubal ligation. The right ovary was normal in size but cystic in appearance.

The left fallopian tube showed the interrupted area of tubal ligation, but the fimbriated end was clearly visible. This tube was stretched over the upper pole of the left ovary to which it was adhered. The left ovary measured approximately 8 cm at its widest diameter and appeared to be entirely replaced by a large, serous cyst containing clear, straw-colored fluid. A right salpingectomy and left salpingo-oophorectomy were performed, leaving the uterus and right ovary intact.

The specimens were submitted to the pathology laboratory. Grossly, the right tube was fimbriated, and was dilated and hemorrhagic in the area of rupture on the proximal portion of the distal segment. The other tube was attached to the ovary that was markedly dilated by the cyst, which, when cut, exuded a yellowish thin fluid. The inner lining of the cyst had congested vascular patterns but without papillary structures. No sections of these were sent for microscopy.

Microscopically, however, the right tube revealed hydropic and immature chorionic villi exhibiting a paucity of vascularity and edema scattered throughout an inflamed and necrotic cellular matrix; areas of prominent syn-

Acknowledgments to Howard Harris, M.D. and James Sumners, M.D. for assistance.

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cial and cytotrophoblastic proliferation were seen and appeared to be adherent to areas of hemorrhagic and edematous tubal muscularis (Figure 1). No embryo or fetal parts were recognized. A diagnosis of hydatidiform mole arising in a primary tubal pregnancy was made.

The post-operative hemoglobin was 10.4 g/dl. No assays for HCG were done. She remained afebrile and had normal return of her bladder and bowel activity. Sutures were removed on the day of dismissal, which was six days post-operatively, and discharge condition was satisfactory. She was sent home on iron supplements and was advised to see her physician again after two weeks for follow-up serum HCG titers, but she was lost to the recommended follow-up.

Discussion

A case of hydatidiform mole arising in a primary fallopian pregnancy has been identified. Documented hydatidiform moles have been reported in other sites outside the uterus, including the ovary (seven cases reported in the literature to date⁴) and abdomen. The difficulty of differentiating between hydropic villi of hydatidiform mole and other conditions, such as threatened abortion, missed or complete abortion, fetal demise, or degeneration within a fibroid, especially in the first trimester, using ultrasound alone makes the diagnosis of a mole a difficult one.⁶

On the other hand, false-negative ultrasound results in ectopic pregnancy with sonoluscent areas and a pseudogestational sac, which may mimic early intrauterine gestation, as seen in our patient, has been emphasized in the literature.⁶

The combined use of biochemical assays, such as serum HCG, with ultrasound offers the best hope of enhancing the sensitivity of sonography in early cases.⁶ Relative to this case report, detection of a low HCG level in relation to her time of gestation may have suggested an abnormal pregnancy. Unfortunately, this was not

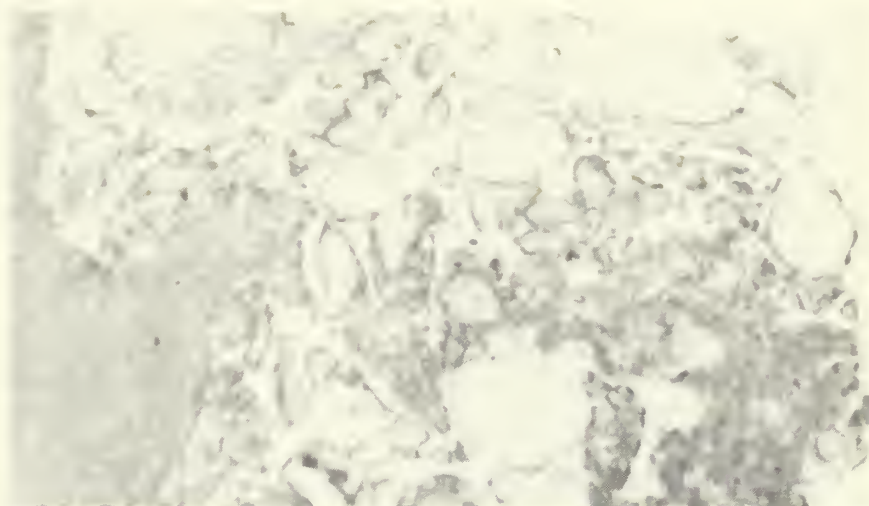


FIGURE 1: Uniformly enlarged, hydropic and immature villi. Note the paucity of blood vessels and the prominent syncytio- and cytotrophoblastic proliferation.

obtained.

Trophoblasts also produce a wide variety of other peptides and proteins, which have been studied recently by immunochemical and immunohistological means and which may be of value in the early diagnosis of molar pregnancy, as well as subsequent detection of progression to malignant disease.⁷⁻¹⁰

Although most of the hydatidiform moles follow a benign course, 3.5% may progress to invasive mole or choriocarcinoma.² Of concern in this

case is the lack of follow-up. Although the focus of disease was successfully removed by operation, and subsequent pregnancies or possible recurrence of mole is no longer feared because both tubes and an ovary were excised, the possibility of tissue-tumor dissemination or trophoblastic seeding, especially after rupture, still exists. The possibility of malignant transformation, which is a greater problem, also exists. Thus, careful monitoring of HCG titers post-operatively should always be done.

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Efficient Use of Blood: Substitution within ABO and Rh Groups, and Unnecessary Use of Washed Cells

ROBERT A. McDOUGAL, M.D.
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MALCOLM SCAMAHORN, M.D.

THIS IS ONE OF a series of papers sponsored by the Joint Task Force on Blood Banking of the Indiana State Medical Association and the Indiana Association of Pathologists. The topics chosen for this series were determined after a review of the responses to a statewide questionnaire on blood banking published in *INDIANA MEDICINE* in 1986.¹

ABO-Rh Substitution

One of the problems posed to the Family Practice Subcommittee was the use of ABO-Rh compatible donor blood within specific ABO-Rh patient groups. It would be ideal to give ABO and Rh specific blood in all cases. The frequency of ABO groups and Rh types in the United States, as noted in *Table 1*,² varies in different racial groups. The white population is most common in Indiana and has approximately equal distribution amongst group O and group A donors and patients. However, group AB comprises only 4% of the white or black populations. In a 100-bed

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TABLE 1
ABO Frequency (%) in U. S. Population²

ABO GROUP	WHITES	BLACKS	AMERICAN INDIANS	ORIENTALS
O	45	49	79	40
A	40	27	16	28
B	11	20	4	27
AB	4	4	<1	5

hospital where more than 2,000 units might be ordered (crossmatched), and over 1,000 units transfused in a year, there would probably be only four group AB, Rh positive patients crossmatched per month and less than two AB, Rh negative patients per month.

It is unreasonable to keep an inventory of group AB blood sufficient to meet the transfusion needs of a possible bleeder, due to the limited shelf life of banked blood and the fact that AB blood cannot be given to any other blood group. Consequently, it is good practice to give group A red cells (as packed red cells or resuspended red cells) to AB recipients, thus minimizing the amount of anti-B in the blood transfused. Since approximately 40% of patients and donors are group A, there is a readily available supply of blood.

Blood crossmatched, but not used, for a group AB patient can readily be used for another group A or AB patient. The only potentially harmful feature is that the anti-B in the donor blood would attach itself to the B antigen on the AB cells of the recipient. This should be of no clinical significance if packed or resuspended red cells are used, in which the plasma

volume is very small (estimated to be 50 ml.).

Therefore, in the opinion of the authors, there is no medical or scientific reason not to use group A red cells for AB recipients. The subcommittee did feel that this should be discussed in, and approved by, the hospital transfusion committee. The AABB Technical Manual³ states that red blood cells of any group are acceptable for AB recipients, noting that group A is more abundant than B and that group O components should be reserved for group O recipients.

Rh Type

Regarding the Rh type, we are referring only to Rh₀ (D or D^u). Rh positive recipients may receive either Rh positive or Rh negative blood. However, Rh negative blood should be reserved for Rh negative recipients. Rh negative recipients should receive Rh negative blood to avoid immunizing the recipient to the D antigen. Group O, Rh negative blood is commonly used in emergency cases when the patient's urgent need for transfusion does not allow the time for ABO grouping and Rh typing, and is commonly used in neonatal practice.

Therefore, slightly more Rh negative blood is used compared to the Rh negative donor population and, not infrequently, there is a relative shortage of Rh negative, particularly group O blood. When there is a minimal amount of Rh negative, ABO compatible blood available, it should be reserved for women who have child-bearing potential, patients with chronic diseases which might require transfusions over a period of time, and those patients who have already developed anti-D antibodies. To conserve the Rh negative blood supply during occasions when there is insufficient Rh negative blood to give patients who are bleeding, or who must undergo emergency surgery, patients other than those listed above (men, women over child-bearing age, or who no longer are fertile because of hysterectomy or tubal ligation), should be given Rh positive blood. If the patient has no anti-D antibody, there is virtually no immediate risk in giving Rh positive blood.

Transfusion of Rh positive blood to Rh negative recipients may produce immunization in up to 80% in some circumstances,⁴ but may be less critical than the risk of not transfusing since it takes as long as three months for the anti-D to appear. The committee suggests that this recommendation be followed only after the blood bank physician and the patient's own physician have consulted and agreed to the substitution. Frequently the only available option is no transfusion, which in a surprising number of cases is the option taken by the patient's own physician.

Washed Red Cells

There has been a marked increase in the use of washed red cells within the last decade. There are two purposes in washing red cells; one is to reduce the number of leukocytes to decrease the incidence of febrile, non-hemolytic transfusion reactions, and the other is to remove allergenic substances in donor plasma.⁵ Urticarial

reactions due to allergenic substances in donor plasma can be prevented or reduced by removing most of the plasma ("packed" red cells) and even more so by washing the red cells of most of the remaining plasma. Some patients who are IgA deficient and who have anti-IgA antibodies, may have anaphylactic reactions following transfusion of blood or components containing IgA.

The AABB Technical Manual states that "although IgA deficiency occurs in about one person per 700, anaphylactic reactions due to anti-IgA are very rare."⁶ It has been shown that the virus of hepatitis B^{7,8} and, presumably, non-A, non-B hepatitis and AIDS are not removed by washing, so washing blood to prevent the transmission of transfusion-associated infections is not justified. The number of urticarial reactions is exceedingly small, particularly when packed or resuspended cells are used containing reduced amounts of plasma. With the rare exception of a patient with anti-IgA, the only justifiable use of washed red cells is to remove leukocytes and prevent febrile non-hemolytic transfusion reactions. Washing of red cells requires entering the unit and, therefore, changes the shelf life to only 24 hours because of the risk of bacterial contamination. Many of these units outdate if they are not used by the intended recipient. It has been shown in the last few years that the use of the microaggregate filter, particularly following centrifugation and cooling, effectively removes most leukocytes.⁹

The spin-cool-filter method allows the usual shelf life. These units can be centrifuged at the appropriate time and kept in the blood bank, so they may be transfused at any time up to their usual expiration date, by using a microaggregate filter. Meryman and Hornblower¹⁰ recently compared several open systems with several closed systems for removing leukocytes. They found that whole blood contained 2.3×10^9 leukocytes, and frozen deglycerolized cells (after

being thawed and washed), 0.03×10^9 leukocytes. The spin-cool-filter method yielded 0.36×10^9 leukocytes, or 85% removal. This is less than the 0.5×10^9 leukocytes considered minimally necessary to cause a febrile reaction in alloimmunized patients.

Meryman and Hornblower's conclusion was that the spin-cool-filter procedure, used with a microaggregate filter, holds advantages for leukocyte removal, red cell recovery, cost, normal shelf life and simplicity over other washing and buffy coat removal procedures currently used. Therefore, our recommendation is that the use of washed cells be restricted to those exceedingly rare cases requiring complete removal of leukocytes or plasma, in which case frozen deglycerolized washed cells are the best component to use.

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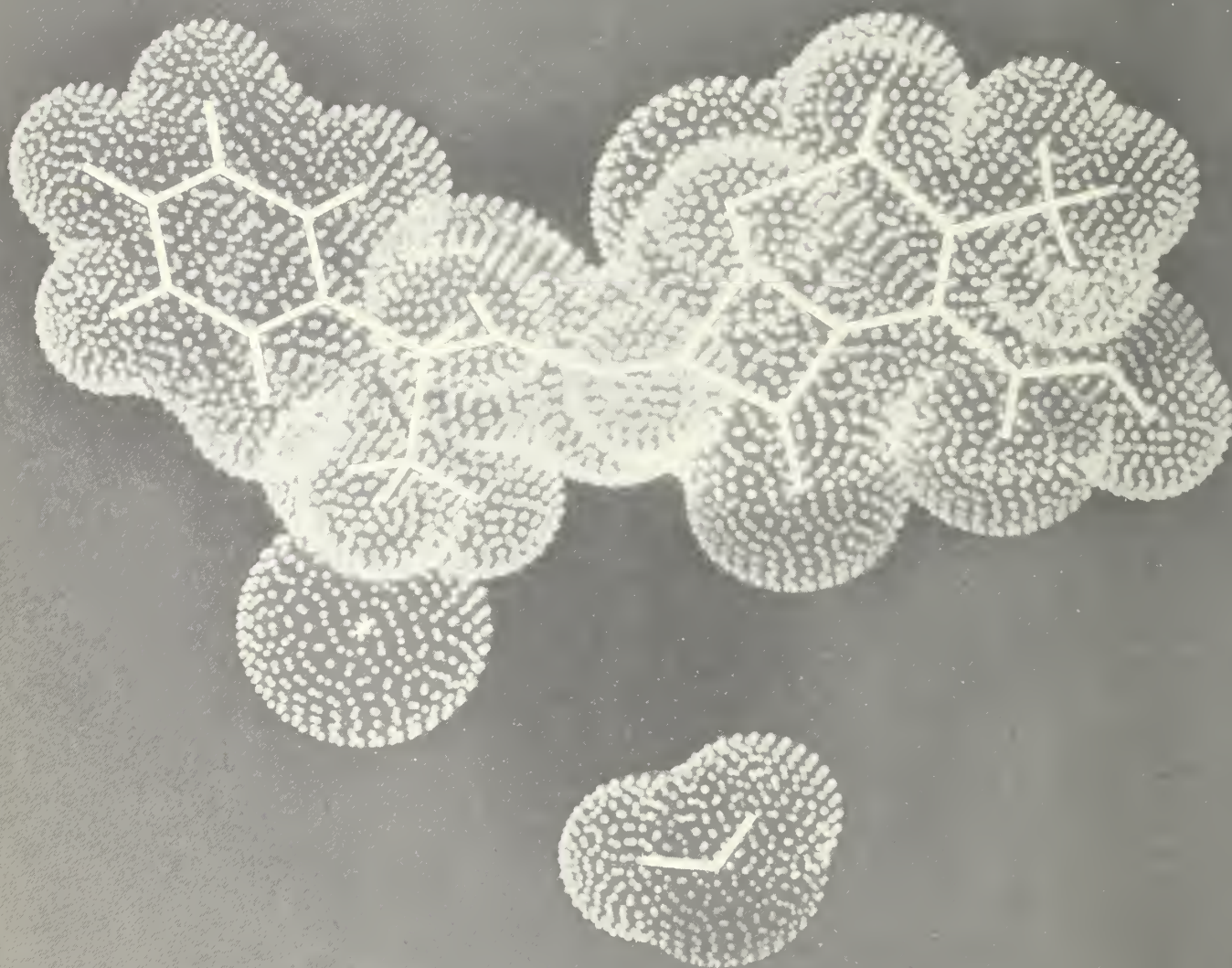
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ANNOUNCING

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†Due to susceptible strains of *Escherichia coli*, *Proteus mirabilis*, and *Klebsiella* sp.

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Summary: Consult the package literature for prescribing information.

Indications and Usage:

Respiratory tract infections caused by susceptible strains of *Streptococcus pneumoniae* and group A β -hemolytic streptococci.

Skin and skin structure infections caused by susceptible strains of *Staphylococcus aureus* and/or β -hemolytic streptococci.

Bone infections caused by susceptible strains of *S aureus* and/or *Proteus mirabilis*.

Genitourinary tract infections, including acute prostatitis, caused by susceptible strains of *Escherichia coli*, *P mirabilis*, and *Klebsiella* sp.

Contraindication: Known allergy to cephalosporins.

Warnings: KEFTAB SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

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Precautions:

- Discontinue Keftab in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Keftab should be administered cautiously in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy and lactation. Cephalexin is excreted in mother's milk. Exercise caution in prescribing Keftab for these patients.
- Safety and effectiveness in children have not been established.

Adverse Reactions:

- *Gastrointestinal*, including diarrhea and, rarely, nausea and vomiting. Transient hepatitis and cholestatic jaundice have been reported rarely.
- *Hypersensitivity* in the form of rash, urticaria, angioedema, and, rarely, erythema multiforme, Stevens-Johnson syndrome, or toxic epidermal necrolysis.
- *Anaphylaxis* has been reported.
- *Other reactions* have included genital/anal pruritus, genital moniliasis, vaginitis/vaginal discharge, dizziness, fatigue, headache, eosinophilia, neutropenia, and thrombocytopenia; reversible interstitial nephritis has been reported rarely.
- Cephalosporins have been implicated in triggering seizures, particularly in patients with renal impairment.
- *Abnormalities in laboratory test results* included slight elevations in aspartate aminotransferase (AST, SGOT) and alanine aminotransferase (ALT, SGPT). False-positive reactions for glucose in the urine may occur with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Several Conditions Causing Elevation of Serum Alpha-Fetoprotein: Experience at King Faisal Specialist Hospital and Research Centre

JEFFREY SH TSUNG, M.D.
Saudi Arabia

ALPHA FETOPROTEIN (AFP) was first discovered in newborn calf serum in 1944 by Pedersen.¹ In 1956, two independent groups of investigators described a similar normal human fetus-specific α -globulin.^{2,3} Abelev and coworkers,⁴ in 1963, noted the occurrence of embryo-specific α -globulin in the serum of mice bearing primary hepatomas. In 1966, Tatarinov⁵ found AFP in the serum of certain human adult subjects who had primary hepatocellular carcinoma (HCC). Later, increased serum levels of AFP were also found in patients with germ cell tumor,⁶ with neoplasm of the gastrointestinal tract,⁷ with liver cirrhosis and viral hepatitis.⁸

The purpose of this article is to categorize the conditions that cause elevation of serum AFP at King Faisal Specialist Hospital and Research Centre (KFSH & RC) and briefly discuss the potential usage and limitations of AFP.

Materials and Methods

The AFP files of the radioimmunoassay (RIA) laboratory from January 1, 1985 to December 31, 1986 were reviewed. The chart numbers of the sample with serum AFP levels greater

Abstract

Between January 1, 1985 and December 31, 1986, 2,562 serum samples were analyzed for alpha-fetoprotein (AFP). One hundred and fifteen patients had levels greater than the upper normal limit (20ng/ml). Alpha-fetoprotein was found in patients with malignant, as well as benign, diseases. In malignant conditions AFP was not tissue specific. It was found in patients with

than 20 ng/ml were identified. The patients' charts were then reviewed for their age, sex and final diagnoses. In all cases, the diagnoses of metastatic carcinoma to liver, pineal gland tumor and germ cell tumor were established by histologic examination. The majority of patients with liver cirrhosis or chronic active hepatitis had percutaneous liver biopsy only with few exceptions. The diagnosis of ataxia-telangiectasia was established clinically and supported by laboratory data. The diagnosis of HCC was established by percutaneous liver biopsy or fine needle aspiration. The diagnostic accuracy of this technique has been reported.⁹

In order to determine the frequency of HCC that had serum AFP levels less than 20 ng/ml, the histology files were searched for HCC during the same period of time. These patients' charts were reviewed for serum AFP levels, age and sex.

The serum AFP levels were determined with kits from Amersham International, Amersham, UK. The normal

hepatocellular carcinoma, germ cell tumor and metastatic carcinoma to the liver. In benign condition, AFP can be used to monitor cirrhotic patients for detection of malignant transformation. Maternal screening for AFP is a well established tool for the prenatal detection of neural tube defects. Increased concentration of AFP in all patients with ataxia-telangiectasia suggests delayed development of liver in these patients.

range, 1-20ng/ml, provided by the company was obtained from a study of a large healthy population.

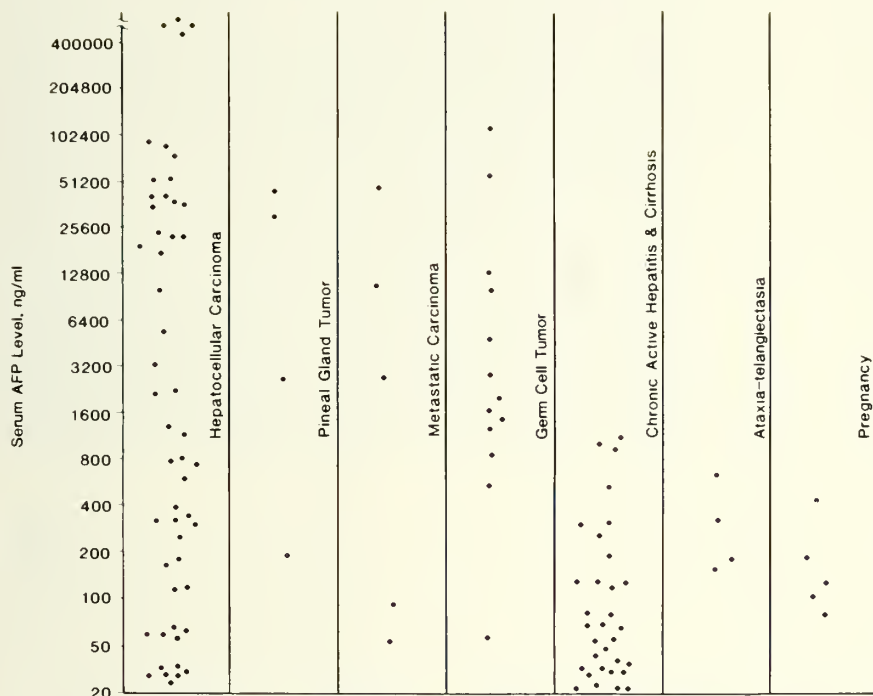
Results

A total of 2,562 serum samples were analyzed for AFP during a 2-year period between January 1, 1985 and December 31, 1986. One hundred and forty-nine samples from 115 patients had serum AFP levels greater than 20 ng/ml. The frequency of increased serum AFP levels was 5.8% (149/2562). The conditions of these 115 patients were categorized, as shown in *Figure 1*. There were 52 patients with HCC; four with pineal gland tumor; five with metastatic carcinoma; 13 with germ cell tumor; 32 with chronic active hepatitis and cirrhosis; four with ataxia telangiectasia; five with pregnancy.

Of 52 patients who had HCC, there were 42 males and 10 females. The ages ranged from 30-80 years, with a median age of 57 years. The serum AFP levels ranged from 25 ng/ml to greater than 400,000 ng/ml.

Eighty-one patients with HCC were

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Elevated serum AFP levels in different conditions.

retrieved from the pathology file. Of 81 patients, 25 had serum AFP levels less than 20 ng/ml; serum AFP levels were not analyzed in four patients. The remaining 52 patients with elevated AFP levels were previously identified in the RIA file. The frequency of HCC patients with normal serum AFP levels was 32% (25/77).

Of five patients with metastatic carcinoma to the liver: two had primary site in the pancreas, two had gastric carcinoma, one had an unknown primary site. The serum AFP levels ranged from 64-34, 800 ng/ml.

Among 32 patients with chronic active hepatitis and cirrhosis, the serum AFP levels ranged from 27-1,087 ng/ml.

In addition, four patients had pineal gland tumor and 13 had gonadal or extragonadal germ cell tumor. Serum AFP levels ranged from 487 ng/ml to 64,570 ng/ml. Five patients had pregnancy in their first trimester. Their serum AFP levels ranged from 96 ng/ml to 500 ng/ml. Four patients with ataxia-telangiectasia with serum AFP ranging from 108 ng/ml to 550 ng/ml.

Discussion

The subjects concerning HCC and AFP have been extensively studied. Two papers were published from KFSH & RC.^{10,11}

In this study the age range and median age of patients with HCC were similar to that in a previous report from this institution.¹⁰ However, there was significant decrease in male to female ratio from 10:1 to 4.2:1.

HCC accounted for almost 50% of cases with increased serum levels of AFP in the RIA laboratory. However, only 70% of patients with HCC had elevated serum AFP levels. It is obvious that serum AFP level is not sensitive for diagnosing HCC. However, AFP still has its merit in monitoring the therapy of patients with HCC.

A study by Kingston, *et al*¹¹ from this institution demonstrated that only four of 25 patients with metastatic liver carcinoma had elevated levels of serum AFP. None of the four patients had serum AFP greater than 200 ng/ml. The primary sites of those 25 patients were not mentioned in their study. However, we found five patients with

metastatic liver cancer to have elevated levels of serum AFP. Of five patients, two had gastric cancers, two had pancreatic carcinoma, and the primary site was unknown in one patient. These patients had markedly elevated levels of serum AFP, 2640 ng/ml, 7080 ng/ml and 34,800 ng/ml respectively. Adenocarcinoma, both with and without liver involvement, may occasionally cause marked serum AFP elevation. Gastric and pancreatic carcinomas were the most common malignancies that cause AFP elevation, even in the absence of liver involvement.¹² Thus, serum AFP levels cannot be used to differentiate HCC from metastatic carcinoma. Increased AFP level was also reported in patients with bronchogenic carcinoma metastatic to the liver.¹³

The clinical use of AFP in the diagnosis and management of gonadal or extragonadal germ cell tumors is well established¹⁴ and an extensive literature has developed in the past few years. International recommendations and collaborative studies on the clinical use of AFP also has appeared in recent years.¹⁵

There were increased AFP in five pregnant women in two years. Although maternal serum AFP screening is a well-established tool for the prenatal detection of neural tube defects,^{16,20} a screening program should not be initiated unless there is an excellent interdisciplinary support among the obstetrician, laboratory, clinical geneticist, ultrasonographer, and an identified program coordinator.¹⁸ It should be emphasized that serum AFP levels should be performed between 16-18 weeks of gestation.

In this study, 32 patients with chronic active hepatitis and cirrhosis had increased serum AFP levels; three patients had serum AFP levels over 1,500 ng/ml. Elevation of serum AFP has been reported in benign liver diseases.¹⁹ Marked elevation of serum AFP can occur occasionally. One patient who had hepatitis concurrent with cirrhosis was found to have serum

AFP level greater than 3,450 ng/ml.²⁰

Detection of HCC in cirrhotic patients continued to be difficult. Long-term monitoring of these patients with serum AFP may be helpful. A sudden sharp rise is suggestive of malignant transformation.

Ataxia-telangiectasia (AT) is a genetic disorder of unknown pathogenesis, with primary defects on the immune and nervous system. Increased concentrations of serum AFP have been demonstrated in patients with AT.^{21,26} The basic mechanism underlying the AFP production is not clear. Delayed development of the liver cells was suggested by Waldman and McIntire.²¹ An alternative hypothesis was that elevation of AFP levels in AT could be due to liver diseases associated with AT.

In summary, patients with elevated serum AFP levels at KFSH & RC can be categorized into seven groups. In malignant conditions, AFP is not tissue specific. It can be seen in patients with HCC, gonadal or extragonadal germ cell tumor or metastatic carcinoma to the liver. The clinical use of AFP in management of the HCC and germ cell tumor has been well-established. AFP can be used to monitor cirrhotic patients. A sudden sharp rise is suggestive of malignant transformation. Maternal AFP screening is a well-established tool for the prenatal detection of neural tube defects. Increased concentrations of AFP in all patients with AT suggest that delayed development of liver occurs in these patients.

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1988 Session Sprints to 1988 Campaigns

Julianna M. Newland
Director of Government Relations

"It were not best that we should all think alike; it is difference of opinion that makes horse races."—Mark Twain

The recent 1987 legislative session will be remembered as the lawmakers' marathon—complete with a special session. The 1988 session, however, will see our lawmakers sprinting through the short session in time to prepare for the "Great Race"—the 1988 elections.

What this means for those of you who measure productivity in volumes of statutory supplements is that your bookshelves won't be very full. By design, the short session is intended to "fix" the flaws in the previously enacted statutes and to add or to take away money in the state budget for "emergency" purposes. While this is the intent, there will still be the flurry of legislative proposals. In the health care/medical area, the ISMA expects about 100 bills that could have an impact on the delivery of medical care. Of that number, expect about 30 to be passed into law.

Here's a preview of some of the more "weighty" health/medical proposals that will come to the attention of our lawmakers:

Restrictions on Physician Dispensing

For several consecutive sessions, the Indiana Pharmacists Association has introduced legislation which would limit the physician's ability to dispense medications from the office. These attempts have failed.

The ISMA, through its House of Delegates, reaffirmed the statutory right of the physician to dispense medications from the office. In the same vein, the ISMA encourages its members to maintain proper records and to dispense the medications in properly labelled containers.

Since the practice of physician dispensing is done for the convenience of the patients, the patients should continue to have the choice of where they want to obtain their medications.

The issue continues to be viewed by lawmakers as a "turf battle" and an economic issue between pharmacists and physicians.

Public Health Issues Regarding AIDS

The Interim Study Committee on Public Health will forward to the 1988 session a package of bills dealing with AIDS.

Some of these provisions include: requiring the I.U. School of Medicine and the School of Dentistry to conduct annual continuing education programs for physicians and dentists on AIDS; making it a Class C felony to knowingly or intentionally sell or donate blood contaminated with HIV antibodies; establishing guidelines for the treatment and disposal of infectious waste including waste from physicians' offices; requiring physicians to report to the State Board of Health those with HIV positive test results (current law requires the reporting of confirmed AIDS cases); and prohibiting persons with a communicable or infectious disease from working in a food establishment where the worker comes in contact with food or food surfaces.

Drug Testing

The Interim Study Committee on Public Health also recommended two proposals in the area of drug testing:

one would require that those schools that choose to conduct drug testing must adopt a policy containing specific guidelines established by the state including confidentiality, reasonable cause, and counseling; the other proposal makes it lawful for an employer to test employees or applicants for drugs or alcohol and establishes requirements for testing.

Surrogate Motherhood

An interim study committee will recommend to the lawmakers that a 2-year moratorium be placed on the enforceability of surrogate motherhood contracts in court until the legislature has further opportunity to study the ethical, social, legal, and medical considerations and issues involved with this practice.

Professional Liability

While it is anticipated that there will be no major concentrated effort to make sweeping changes to Indiana's Medical Malpractice Act, individual bills may be filed dealing with territorial rates, the cap on damages, and other issues. The Sunset Committee will have several specific proposals dealing with the operations of the Insurance Department which administers the Patient's Compensation Fund—not the least of which will be computerization of the office.

Mandatory Assignment Tied to Licensure

The U.S. Supreme Court recently upheld a law in Massachusetts which ties medical licensure to mandatory acceptance of assignment under Medicare. This court action will clear the way for future activity in other states. Some senior citizen groups in Indiana have expressed an interest in pursuing this issue in the Indiana Legislature.

Tobacco Issues

The 1986 ISMA House of Delegates adopted a resolution asking for legislation to increase the minimum age for the sale of tobacco to minors and to establish designated non-smoking areas in hospitals, health facilities, and government buildings.

A law was enacted in 1987 dealing with the sale of tobacco to minors but it did not affect the free distribution

of tobacco to minors.

Also, the 1987 ISMA House of Delegates adopted a resolution to ban smoking entirely in all hospitals and health facilities.

Two bills will be introduced in the 1988 session: one will ban the free distribution of tobacco to those under age 18; the other will ban smoking in all areas of hospitals and health facilities.

By law, the 1988 session must adjourn by March 15. High betting places adjournment closer to the end of February.

If any physicians would like to volunteer one day at the State House as the Physician of the Day for the lawmakers, please contact the ISMA's Department of Government Relations.

Medical Malpractice Program Grants Available

The Medical Malpractice Program is a nationwide research and demonstration initiative of The Robert Wood Johnson Foundation. The goals of the Program are to: (1) advance the state of knowledge about what constitutes negligent medical care, the factors that cause it, and how it can be prevented; and (2) demonstrate and evaluate the effectiveness of various legal, insurance, and medical practice reforms.

In 1987, grants totaling \$3.2 million were awarded under this Program. During the second year of the Program, up to \$2.7 million in grants for demonstrations and research projects will be available to eligible organizations in medicine, law, insurance, government, and academia. Selection of projects will be based upon their potential for significantly influencing public policy, professional practices, and organizational decision-making regarding medical liability.

Eligibility and selection criteria

To be considered for support, the applicant organization must be a governmental agency or have qualified for tax exemption under Section 501(c)(3) of the Internal Revenue Code and not be a private foundation as defined under Section 509(a). For applicants meeting those eligibility criteria, factors to be considered in evaluating applications include:

- the potential of the intervention to reduce negligent medical practice or to influence the rate of growth of malpractice claims, settlements, awards, and insurance premiums

- the demonstrated support of policymakers in agencies and institutions relevant to the proposed intervention
- the applicant's experience and qualifications in the area of intervention and the time commitment of key project staff
- the proposed tasks to be undertaken and milestones to be met in conducting and completing the project
- the research methodology or demonstration plan

Application procedures

Individuals interested in applying for a grant under the Medical Malpractice Program should send a letter (maximum length, four pages) to Ms. Kane outlining the proposed project. The letter should include a general statement about the project's purpose and objectives, its potential impact, and its approach or methodology (including data sources and plans for analysis). These letters will be treated as preliminary proposals from which a limited number will be selected to compete in a second.

Address for all inquiries and requests

Phyllis L. Kane
Program Assistant
The Robert Wood Johnson Foundation
College Road & U.S. Route One
Post Office Box 2316
Princeton, New Jersey 08543-2316
609/452-8701

THE EFFECTIVE OFFICE MANAGER

Jack Valancy's Management Notes for Physicians

JACK VALANCY
Cleveland Heights, Ohio

EVERY OFFICE, from a solo practice to a large group, needs an office manager—someone who keeps the business running smoothly and frees the physicians to practice medicine. Without an office manager, a physician would spend many hours on details, operating his or her practice below its potential.

To get a good office manager, you have to be a good manager yourself. That means defining what you want the office manager to do, granting her the authority she needs to do it, monitoring performance, and, most important, taking corrective action if she performs poorly.*

The Peter Principle

In a hierarchy, every employee tends to rise to his level of incompetence.

—Laurence J. Peter

In medical practices, as in other organizations, promotions frequently are based on seniority alone. Whether

*With few exceptions, the people who work in physicians' offices are women. The use of feminine pronouns is merely a reflection of this situation.

Copyright by Jack Valancy. Reprinted with permission. Jack Valancy heads a health care management consulting firm in Cleveland Heights, Ohio.

it's out of loyalty ("She's been with us since the beginning") or intimidation ("If we don't make her the office manager, she'll be angry or quit"), physicians are inclined to ignore their misgivings. The promotion usually is accompanied by a hefty raise.

Sometimes this arrangement works well. In other cases, the practice witnesses the Peter Principle in action. Consider, for example, the assistant whose sharp tongue drives away both patients and staff; the bookkeeper so engrossed with the minutiae of record-keeping that she fails to see the insurance clerk's mountain of unprocessed claims; or the transcriptionist so easily distracted by her new responsibilities that she can't complete her own work. There are other pitfalls.

An office manager can become intoxicated with her new title, delegating all her work to the staff, or she might become compulsive and try to do everything herself. Although promotion sets her apart, she might try to remain "one of the gang," failing to discipline staffers for the most egregious offenses. She might become a nit-picker, finding fault with the most innocuous behavior; or worse, she could play favorites among the employees.

Failure to Act

It's easy to put the wrong person in the office manager's position. You never really know how someone will perform until she is actually in the job. However, failing to remove a person from a position when it's clear that she is not suited for it, is a serious mistake. Physicians who tolerate an ineffective office manager are likely to have a practice in turmoil.

Selecting an Office Manager

A good office manager has some crucial abilities and characteristics. She communicates clearly (orally and in writing), works well with others, perceives problems and develops solutions, sets and accomplishes goals, and teaches others to perform tasks properly. In addition, a good office manager balances loyalty to the practice with loyalty to herself. Workaholics can be destructive to themselves and their practices. She has an interest in improving her skills through continuing education. Finally, the good office manager displays grace under pressure.

Unless the practice is large, the office manager does not spend all of her time supervising and performing administrative tasks. She is likely to be a working office manager, dividing her time between management and non-management functions. In a practice with two employees, the office manager might spend only a few hours a week "managing." In an office with 10 employees, "managing" could take half of her time.

Promoting a current employee based on merits (rather than seniority), has several advantages. First, you know her personally; you are familiar with her abilities, and the quality of her work. Second, she understands the operations of the practice. Third, such a promotion gives her an opportunity for career growth. Your objective is to promote the person who will serve the practice best in the future, not to reward someone for past performance in another capacity.

If you decide to look outside of your practice for candidates, be sure to check references carefully. Determine

if the applicant has been successful as the office manager of a medical practice. Even if she has an advanced degree and professional affiliations, successful on-the-job experience is the proof of her ability.

Define the nature of the supervision and the authority, the office manager will exercise. Make it clear whether she can hire and fire, grant raises, and discipline employees, or just make recommendations.

Resist the temptation to appoint two office managers if there is a deep division between your front- and back-office personnel. A power struggle between them might turn the practice into a battleground. Assign one person to the office manager position, and then assign one or more people to supervise certain areas. For example, an office manager with business office skills might supervise, train, assign work, and perform administrative functions for the practice's clerical staff, but

handle only administrative functions for the clinical staff. Clinical personnel would receive direct supervision, training, and work assignments from a clinical supervisor (such as a head nurse), who would report to the physician(s) for professional guidance and to the office manager for administrative matters. Define exactly how the office manager and area supervisors will work together. Make sure everyone understands lines of authority and areas of responsibility.

Support

Communicate, preferably in writing, what you expect the office manager to accomplish. Then give her room to do her job. Don't stand over her, but don't give her too much authority, such as allowing her to sign checks.

Monitor her performance by observing the results of her work. Meet with her formally and informally. Really listen to her; her reports should be

taken seriously. She should keep you informed, but not burden you with details.

The office manager should have a quiet place to work. She should have use of an office for interviews and other private business conversations.

It is common for the other employees to test a new office manager. They may circumvent her and approach you directly. You must demonstrate that you will not permit her to be undermined. Except for allegations that she is acting unfairly or unethically, employee questions should be referred to the office manager.

Providing guidance to the office manager, bearing in mind that it might take several months for her to feel comfortable in her new position. A modest investment in formal supervisory training for the office manager will help her develop skills for working effectively.

Look-Alike and Sound-Alike Drug Names

BENJAMIN TEPLITSKY, R. PH.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

Category:
Brand Name:
Generic Name:
Dosage Forms:

Category:
Brand Name:

Generic Name:
Dosage Forms:

CAPTOPRIL
Antihypertensive
Capoten, Squibb
Captopril
Tablets

CEFORANIDE
Cephalosporin
Precef, Bristol Labs

Ceforanide
Powder for Injection

CAPITROL
Antiseborrheic
Capitol, Westwood
Chloroxine
Shampoo

CEPHRADINE
Cephalosporin
Anspor, SKF
Velocef, Squibb
Cephhradine
Capsules, Oral suspension,
Powder for Injection

YOCON[®]

YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors. Its effect on blood pressure, if any, would be to lower it, however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral alpha-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

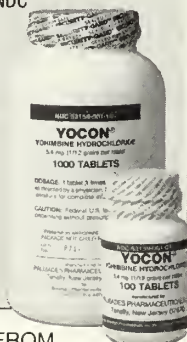
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological Basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27-2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Indications: Management of anxiety disorders; short-term relief of anxiety symptoms, acute alcohol withdrawal symptoms, preoperative apprehension and anxiety. Usually not required for anxiety or tension associated with stress of everyday life. Efficacy beyond four months not established by systematic clinical studies. Periodic reassessment of therapy recommended.

Contraindications: Known hypersensitivity to the drug.

Warnings: Warn patients that mental and/or physical abilities required for tasks such as driving or operating machinery may be impaired, as may be mental alertness in children, and that concomitant use with alcohol or CNS depressants may have an additive effect. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage. Withdrawal symptoms (including convulsions) reported after abrupt cessation of extended use of excessive doses are similar to those seen with barbiturates. Milder symptoms reported infrequently when continuous therapy is abruptly ended. Avoid abrupt discontinuation; gradually taper dosage.

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually, as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants, causal relationship has not been established clinically. Due to isolated reports of exacerbation, use with caution in patients with porphyria.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment, blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Usual Daily Dosage: Individualize for maximum beneficial effects. Oral—Adults: Mild and moderate anxiety disorders and symptoms, 5 or 10 mg t.i.d. or q.i.d., severe states, 20 or 25 mg t.i.d. or q.i.d. Geriatric patients, 5 mg b.i.d. to q.i.d. (See Precautions).

Supplied: Librium[®] (chlordiazepoxide HCl/Roche) Capsules, 5 mg, 10 mg and 25 mg—bottles at 100 and 500; Tel-E-Dose[®] packages of 100, available in boxes of 4 reverse-numbered cards of 25, and in boxes containing 10 strips of 10 Librifabs[®] (chlordiazepoxide/Roche) Tablets, 5 mg and 10 mg—bottles at 100 and 500; 25 mg—bottles of 100. With respect to clinical activity, capsules and tablets are indistinguishable.



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Before prescribing, see complete prescribing information in SK&F LAB CO. literature or PDR. The following is a brief summary.

Contraindications: There are no known contraindications to the use of 'Tagamet'.

Precautions: While a weak antiandrogenic effect has been demonstrated in animals, 'Tagamet' has been shown to have no effect on spermatogenesis, sperm count, motility, morphology or in vitro fertilizing capacity in humans.

In a 24-month toxicity study in rats at dose levels approximately 9 to 56 times the recommended human dose, benign Leydig cell tumors were seen. These were common in both the treated and control groups, and the incidence became significantly higher only in the aged rats receiving 'Tagamet'.

Rare instances of cardiac arrhythmias and hypotension have been reported following the rapid administration of 'Tagamet' HCl (brand of cimetidine hydrochloride) injection by intravenous bolus.

Symptomatic response to 'Tagamet' therapy does not preclude the presence of a gastric malignancy. There have been rare reports of transient healing of gastric ulcers despite subsequently documented malignancy.

Reversible confusional states have been reported on occasion, predominantly in severely ill patients.

'Tagamet' has been reported to reduce the hepatic metabolism of warfarin-type anticoagulants, phenytoin, propranolol, chlorthalidone, diazepam, lidocaine, theophylline and metronidazole. Clinically significant effects have been reported with the warfarin anticoagulants; therefore, close monitoring of prothrombin time is recommended, and adjustment of the anticoagulant dose may be necessary when 'Tagamet' is administered concomitantly. Interaction with phenytoin, lidocaine and theophylline has also been reported to produce adverse clinical effects.

However, a crossover study in healthy subjects receiving either 'Tagamet' 300 mg. q.i.d. or 800 mg. h.s. concomitantly with a 300 mg. b.i.d. dosage of theophylline (Theo-Dur®, Key Pharmaceuticals, Inc.),

demonstrated less alteration in steady-state theophylline peak serum levels with the 800 mg. h.s. regimen, particularly in subjects aged 54 years and older. Data beyond ten days are not available. [Note: All patients receiving theophylline should be monitored appropriately, regardless of concomitant drug therapy.]

Lack of experience to date precludes recommending 'Tagamet' for use in pregnant patients, women of childbearing potential, nursing mothers or children under 16 unless anticipated benefits outweigh potential risks; generally, nursing should not be undertaken in patients taking the drug since cimetidine is secreted in human milk.

Adverse Reactions: Diarrhea, dizziness, somnolence, headache, rash. Reversible arthralgia, myalgia and exacerbation of joint symptoms in patients with preexisting arthritis have been reported. Reversible confusional states (e.g., mental confusion, agitation, psychosis, depression, anxiety, hallucinations, disorientation), predominantly in severely ill patients, have been reported. Gynecomastia and reversible impotence in patients with pathological hypersecretory disorders receiving 'Tagamet', particularly in high doses, for at least 12 months, have been reported. Reversible alopecia has been reported very rarely. Decreased white blood cell counts in 'Tagamet'-treated patients (approximately 1 per 100,000 patients), including agranulocytosis (approximately 3 per million patients), have been reported, including a few reports of recurrence on rechallenge. Most of these reports were in patients who had serious concomitant illnesses and received drugs and/or treatment known to produce neutropenia. Thrombocytopenia (approximately 3 per million patients) and a few cases of aplastic anemia have also been reported. Increased serum transaminase and creatinine, as well as rare cases of fever, interstitial nephritis, urinary retention, pancreatitis and allergic reactions, including hypersensitivity vasculitis, have been reported. Reversible adverse hepatic effects, cholestatic or mixed cholestatic-hepatocellular in nature, have been reported rarely. Because of the predominance of cholestatic features, severe parenchymal injury is considered highly unlikely.

A single case of biopsy-proven periportal hepatic fibrosis in a patient receiving 'Tagamet' has been reported.

How Supplied: Tablets: 200 mg. tablets in bottles of 100; 300 mg. tablets in bottles of 100 and Single Unit Packages of 100 (intended for institutional use only); 400 mg. tablets in bottles of 60 and Single Unit Packages of 100 (intended for institutional use only), and 800 mg. Tiltab® tablets in bottles of 30 and Single Unit Packages of 100 (intended for institutional use only).

Liquide: 300 mg./5 ml., in 8 fl. oz. (237 ml.) amber glass bottles and in single-dose units (300 mg./5 ml.), in packages of 10 (intended for institutional use only).

Injection:

Vials: 300 mg./2 ml. in single-dose vials, in packages of 10 and 30, and in 8 ml. multiple-dose vials, in packages of 10 and 25.

Prefilled Syringes: 300 mg./2 ml. in single-dose prefilled disposable syringes.

Plastic Containers: 300 mg. in 50 ml. of 0.9% Sodium Chloride in single-dose plastic containers, in packages of 4 units. No preservative has been added.

ADD-Vantage® Vials: 300 mg./2 ml. in single-dose, ADD-Vantage® Vials, in packages of 25.

Exposure of the premixed product to excessive heat should be avoided. It is recommended the product be stored at controlled room temperature. Brief exposure up to 40°C does not adversely affect the premixed product.

'Tagamet' HCl (brand of cimetidine hydrochloride) injection premixed in single-dose plastic containers is manufactured for SK&F Lab Co. by Travenol Laboratories, Inc., Deerfield, IL 60015.

* ADD-Vantage® is a trademark of Abbott Laboratories.

BRS-TG-L738

Date of issuance Apr. 1987

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* Not for initial therapy. See brief summary.

Before prescribing, see complete
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The following is a brief summary.

* WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. Associated widened QRS complex or arrhythmia requires prompt additional therapy. Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or

without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of triamterene and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Angiotensin-converting enzyme (ACE) inhibitors can elevate serum potassium; use with caution with 'Dyazide'. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine.

Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The

following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should develop. Corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function. Thiazides may add to or potentiate the action of other antihypertensive drugs. Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions, nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

BRS-DZ-145

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MEDICAL MALPRACTICE UPDATE

Physician's Liability for Failure to Consult with and/or Refer a Patient to a Specialist

ROBERT W. STROHMEYER JR., J.D.
ROBERT J. SHULA, J.D.
Indianapolis

AS MANY SEASONED physicians are quick to point out, the practice of medicine has changed considerably in the past few decades. The general practitioners of old are slowly, but surely, being replaced by board certified specialists practicing in such areas as internal medicine, family practice and pediatrics. This "age of specialization" in the practice of medicine has occurred as a result of the phenomenal advances made in medicine over the past several decades. These advances have not only resulted in the formation of several new specialty classes, but have also resulted in the development of both formal and informal subspecialties within a given specialty class.

As a result of increased specialization, the question has arisen as to whether or not a physician has a duty under certain circumstances to defer to the judgment of another physician, most often a specialist, in diagnosing and treating his patient's condition. When must a physician defer to the judgment of a specialist, and how are we to measure the physician's conduct when the treatment a patient has received has not produced the result

expected? This is an issue currently being addressed by the courts, and some general rules have been developed to aid both the physician and the attorney.

The generally accepted statement of the duty owed by a physician to his patient is as follows: Negligence on the part of a physician is the failure of the physician to exercise that degree of reasonable or ordinary skill and care in the treatment of his patient that is ordinarily possessed and exercised by other physicians engaged in the same line of practice in the same or a similar locality. The negligence may consist of doing some act which the physician should not have done under the circumstances, or the failure to do something which the physician should have done under the circumstances. When the physician holds himself out as a specialist and undertakes service in a special branch of medical, surgical or other healing science, the specialist owes to his patient a duty of possessing that degree of learning and skill ordinarily possessed and used by other specialists in good standing, practicing in the same special field, in the same or a similar locality and under like or similar circumstances.¹

Clearly, a physician is not bound to follow any one particular, recognized method of treating a patient under a given set of circumstances if there are other methods of treatment which are also recognized as appropriate under the same circumstances.² Nor is a physician negligent merely because he has failed to properly diagnose a particular illness or ailment where the cir-

cumstances disclose that the patient could be suffering from one of many conditions and the physician has exercised reasonable care in arriving at his diagnosis.³ The issue is simply whether or not the physician has exercised reasonable care in diagnosing and treating the patient as measured against the standard of care for physicians treating patients under like or similar circumstances. This standard of care (i.e. what the physician should or should not have done) must be established by expert medical testimony, for the standard of care is generally beyond the knowledge and understanding of laymen.⁴

A problem may arise, however, when the physician who has adopted a particular method of treatment finds that the patient is not progressing as one would expect a patient to progress under the circumstances. Physicians are generally quite cognizant of their own skill and are quick to defer to the judgment of another physician, generally a specialist, when they *first* see a patient and know or have reason to know that the condition confronting them is beyond their knowledge, ability, or capacity to treat (including the availability of resources to treat). Clearly, a physician who knows or has reason to know he does not possess the knowledge, ability, or capacity to treat a particular condition in the first instance yet undertakes to treat the condition may be liable for malpractice.⁵ It is the physician who initially exercises reasonable care in undertaking to treat a patient only to find that his treatment is not producing the desired

The authors are associated with Bingham Summers Welsh & Spilman, Indianapolis

result who faces very difficult decisions.

When the chosen treatment does not produce the desired result, the physician is faced with many questions. Was the original diagnosis correct? Should another method of treatment be adopted? Should the patient be referred to or should consultation be sought from a specialist or, in the case of a specialist, another specialist practicing in the same specialty yet possessing greater expertise in the treatment of the particular condition? Again, the question becomes what does reasonable care require, the standard of care being what other physicians exercising reasonable and ordinary care and skill would have done under like or similar circumstances.

The Supreme Court of Texas' decision in *King v. Flamm*⁶ illustrates this problem. Mrs. King telephoned Dr. Flamm, a general practitioner who had been Mrs. King's physician for several years, three weeks after having had a laminectomy performed by physicians not associated with Dr. Flamm. Mrs. King complained of chest pain for which Dr. Flamm prescribed Darvon. The next day, Mrs. King was seen by one of Dr. Flamm's associates who diagnosed her condition as pleurisy and prescribed the appropriate medication. Unfortunately, Mrs. King remained in pain for another week and occasionally coughed up blood. When she later developed a fever, Dr. Flamm prescribed another antibiotic.

After three days of fever without relief, Mrs. King telephoned Dr. Duke, a specialist in internal medicine, and requested that he see her. Dr. Duke refused to see Mrs. King until approval was obtained from Dr. Flamm. When Mrs. King requested that Dr. Flamm consult Dr. Duke, Dr. Flamm refused and admitted Mrs. King to the hospital for x-rays. After two weeks of hospitalization, Mrs. King was discharged with a final diagnosis of pneumonia and pleurisy. No consultation was sought by Dr. Flamm.

After a few days at home, Mrs. King

again began to cough up blood and again requested that Dr. Flamm consult Dr. Duke. Mrs. King was again admitted to the hospital, and Dr. Flamm finally consented to consultation. Mrs. King was then seen by Dr. Duke. Dr. Duke diagnosed Mrs. King's condition as pulmonary embolism resulting from thrombophlebitis in her lower extremities and pelvic area. Subsequently, an inferior vena cava plication and bilateral ovarium vein ligation were performed.

Mrs. King alleged that Dr. Flamm was negligent in his diagnosis and in failing to consult with Dr. Duke sooner. The expert medical testimony presented disclosed that although Dr. Flamm's diagnosis may have been incorrect, it was a reasonable diagnosis under the circumstances. Thus, because Dr. Flamm's original diagnosis was reasonable and within the standard of care, no liability would result from the improper diagnosis.

However, the expert medical testimony also disclosed that, under the circumstances, most general practitioners would have and should have called in a specialist when Mrs. King continued to cough up blood. Thus, although Dr. Flamm's original diagnosis may have been reasonable under the circumstances, it was not reasonable for Dr. Flamm to continue to treat the condition without consulting a specialist when the results of the treatment were not what one would expect under the circumstances. The court stated that a general practitioner is not required to consult with a specialist on every conceivable complication that may arise in his practice. If the physician exercises the care and skill of other physicians similarly situated, he is not responsible for an error of judgment even though a specialist would not have made the same mistake. But there is a duty to seek consultation with, or refer the patient to, a specialist when the physician knows, or in the exercise of reasonable care should know, that the services of a specialist are indicated.

The physician is to be judged on the basis of the standards and practices of his profession. If there is expert testimony fairly supporting the conclusion that a reasonably careful and prudent physician would have sought consultation under the same or similar circumstances, the jury is entitled to find that the physician was negligent in failing to do so.⁷

Clearly, a physician must keep an open mind throughout all phases of caring for a patient. There are several factors the physician must consider in deciding whether consultation or referral is necessary. Firstly, the physician must evaluate his own skills, for if he knows or has reason to know that the patient's condition is beyond his knowledge, ability, or capacity to treat, he is obligated to defer to the judgment of a specialist. Once a treatment program has been initiated, the physician must constantly evaluate and monitor the progress he has made in treating the patient, and if he knows or has reason to know that the method of treatment he has chosen is not producing the expected results, he must consider the need to consult or refer the patient to another physician. Although it may sometimes be difficult to decide whether consultation or referral is necessary, the physician must be guided by his training, experience, and, primarily, common sense. The best and safest rule to follow is: "When in doubt - refer".

Note: The litigation practice at Bingham Summers Welsh & Spilman includes the defense of medical malpractice claims filed against physicians, hospitals, nurses and other health care providers. The authors of this article and other Bingham Summers Welsh & Spilman attorneys involved in the defense of medical malpractice claims are available for the presentation of seminars designed to inform health care providers of the nature and scope of the medical malpractice laws in Indiana, as well as helpful guidelines to avoid medical

malpractice claims. For further information concerning these seminars, contact Mr. Shula or Mr. Strohmeyer at Bingham Summers Welsh & Spilman, 2700 One Indiana Square, Indianapolis, Indiana 46204, telephone number (317) 635-8900.

REFERENCES

1. *Bassett v. Glock*, 174 Ind. App. 439, 368 N.E.2d 18 (1977); *Adkins v. Ropp*, 105 Ind. App. 331, 14 N.E.2d 727 (1938). Indiana still holds to the locality rule which requires that the physician's conduct be measured by the standard of care of physicians practicing in the same or a similar locality. Many states no longer hold to the locality rule.
2. *Fall v. White*, 449 N.E.2d 628 (Ind. App. 1983); *Joy v. Chau*, 177 Ind. App. 29, 377 N.E.2d 670 (1978).
3. *Edwards v. Uland*, 193 Ind. 376, 140 N.E. 546 (1923).
4. *Bassett v. Glock*, 174 Ind. App. 439, 368 N.E.2d 18 (1977).
5. *Manion v. Tweedy*, 257 Minn. 59, 100 N.W.2d 124 (1959).
6. 442 S.W.2d 679 (Tex. Sup. Ct. 1969), reh. den.
7. *Id.* at 681.

Indiana Medical Group Management Association

The Indiana Medical Group Management Association is an organization dedicated to the continuing education of managers of medical groups. It is an independent state organization affiliated with the national Medical Group Management Association located in Denver, Colorado.

Three state meetings are held annually in the spring, fall and winter. State meetings are structured to assist the manager with answers for practice problems of small and large groups. Past state meetings have focused on marketing, personnel, HMOs, change, finance, building facilities, joint ventures, legislation and other pertinent topics. Dues for IMGMA are \$20 annually. Additional registration fees are required for meetings. 127 practice managers are currently members of the Indiana Medical Group Management Association.

Membership in the national Medical Group Management Association gives the manager access to conferences on a regional and national level. Indiana is in the midwest region which has a conference each summer, usually in one of our northern states. A national conference is held annually, in October, in a major city in the United States. Both conferences are designed to improve the management skills of the group practice manager.

The national office is a source of information for any practice problem at any time. Literature is sent

to members regularly to keep them informed about legislative changes and other pertinent issues. Dues to the national organization are based on the number of physicians in the group practice.

Physicians in group practice should consider continuing education of their managers a necessity. Managers must work to keep their education current or it is of little value in this environment of change. Further information on the Indiana Medical Group Management Association or the national Medical Group Management Association may be obtained by contacting any of the officers listed below.

Carol A. Miller, President
Indiana Center for Surgery and
Rehabilitation of the Hand & Upper Extremity
8501 Harcourt Road
P.O. Box 80434
Indianapolis, Indiana 46280-0434

Leonard C. Walker, President Elect
Burlington Clinic
3109 N. Sycamore
Kokomo, Indiana 46901

Mary C. Sturm, Secretary-Treasurer
Rheumatology Associates
8802 N. Meridian, Ste. 108
Indianapolis, Indiana 46260

1987 CONVENTION REPORT

Photos by
Ed Lacey, Jr.
Indianapolis



Dr. Fred W. Dahling, speaker of the House, addresses delegates during the 138th annual convention. Seated are (from left) Dr. Helen Czenkusch, parliamentarian; Dr. John D. MacDougall, president-elect; Dr. Shirley Thompson Khalouf, president; and Dr. C. Dyke Egnatz, vice-speaker.



Dr. Charles H. Aust and Dr. Robert W. Dettmer of the Allen-Fort Wayne County Medical Society were among the more than 200 delegates comprising the ISMA House.



Dottie Martens of the ISMA staff assists conventioners in the registration process.



Dr. Richard L. Reedy, Dr. John V. Osborne and Dr. L. Marshall Roch listen to Reference Committee reports during the final House session.



Dr. Paul Siebenmorgen of Terre Haute (standing), immediate past president, testifies during the meeting of Reference Committee 4 (Medical Education and Insurance).



Mr. Chester C. Stroyny, acting regional administrator of the Region V Health Care Financing Administration (HFCA), Chicago Regional Office, was among several guest speakers who addressed General Scientific Meeting participants. Mr. Stroyny dealt with catastrophic health care as seen through the eyes of the federal government.



This year's convention attracted 49 commercial exhibitors, including representatives of the computer industry, financial institutions, insurance agencies, medical laboratories, government agencies and pharmaceutical firms.



Dr. MacDougall and Dr. Edward L. Langston talk with Mr. Mitchell E. Daniels Jr. of the Hudson Institute just before the IMPAC luncheon at which Mr. Daniels was guest speaker.



Dr. Khalouf chats with Dr. and Mrs. George Rawls during the President's Night reception.



Dr. Richard L. Reedy and Dr. William E. Cooper listen to a sales representative's explanation at a computer display.



Jay County Hospital's exhibit at the Practice Opportunity Fair attracted the attention of several residents.



Dr. Khalouf presents a bouquet to Mrs. Anne Throop, ISMA Auxiliary president.



Dr. MacDougall presents a recognition plaque to Dr. Khalouf.

Call to Order, Miscellaneous Business

The Indiana State Medical Association House of Delegates convened its 138th Annual Convention, featuring the theme "The Changing Face of Medicine," at 9:30 a.m., EST, Friday, November 6, 1987, at the Radisson, Indianapolis. The final session of the House of Delegates convened at 9:00 a.m., EST, Sunday, November 8, 1987. Presiding at both sessions were Dr. Fred Dahling, speaker, assisted by Dr. C. Dyke Egnatz, vice speaker. Dr. Helen Czenkusch, Indianapolis, served as parliamentarian.

Approval of Minutes

The proceedings of the 137th Annual Meeting of the House of Delegates, Indiana State Medical Association, conducted October 30-November 2, 1986, at the Hyatt Regency, Indianapolis, and published in the January 1987 issue of *INDIANA MEDICINE*, were approved.

Election of Officers

Dr. John D. MacDougall, Beech Grove, as president-elect, succeeded to the office of president. Dr. Fred W.

Dahling, New Haven, was elected president-elect. Other elections included:

Treasurer—Dr. George Rawls, Indianapolis

Assistant Treasurer—Dr. Max Wesemann, Franklin

Speaker of the House—Dr. C. Dyke Egnatz, Schererville

Vice Speaker of the House—Dr. William H. Beeson, Indianapolis

Chairman, Board of Trustees—Dr. Michael Mellinger, LaGrange

Clerk/Chairman Pro Tem, Board of Trustees—Dr. William E. Cooper, Columbus

At Large Member, Executive Committee—Dr. William C. VanNess II, Summitville

At Large Member, Executive Committee—Dr. Benny Ko, Terre Haute

Election of Delegates, Alt. Delegates to the AMA

The following were elected to two-year terms as delegates and alternate delegates to the American Medical Association, their terms to expire December 31, 1989:

Delegates:

Marvin E. Priddy, M.D., Fort Wayne
Peter R. Petrich, M.D., Attica
Thomas C. Tyrrell, M.D., Munster

Alternates:

Martin J. O'Neill, M.D., Valparaiso
Herbert C. Khalouf, M.D., Marion
Richard L. Reedy, M.D., Yorktown

Holdover AMA delegates and alternate delegates (terms expire December 31, 1988) are:

Delegates:

Everett E. Bickers, M.D., Floyds Knobs
Alvin J. Haley, M.D., Carmel
John Knote, M.D., Lafayette

Alternates:

Edward Langston, M.D., Flora
George Lukemeyer, M.D., Indianapolis
Robert M. Seibel, M.D., Nashville

Elected/Re-elected Trustees, Alternates 1987-88

Trustees:

District 2—Paul Wenzler, M.D.
District 5—Benny Ko, M.D.

In Memoriam

Tribute to members of the Indiana State Medical Association who have died since the 1986 session.

John B. Anderson, M.D., Vincennes
George O. Avery, M.D., Indianapolis
Amando L. Baluyut, M.D., Peru
Herbert E. Baumeister, M.D., Indianapolis
John W. Beeler, M.D., Indianapolis
Roland F. Beers, M.D., Elkhart
William W. Bourke, M.D., Marion
Wendell E. Brown, M.D., Indianapolis
Boyd A. Burkhardt, M.D., Fort Lauderdale, FL (formerly of Tipton)
Kendall W. Caldwell, M.D., Connersville
Stanley M. Casey, M.D., Huntington
Wallace E. Childs, M.D., Madison
Gordon C. Cook, M.D., South Bend
Kenneth F. Corpe, M.D., Rushville
James H. Crowder, M.D., Sullivan
Kenneth L. Culbertson, M.D., South Bend
Gene C. Cunningham, M.D., Martinsville
Dorothy R. Darling, M.D., Merrillville

L.B. Davis, M.D., Rochester
Mark W. Dick, M.D., Bloomington
Luther H. Downer, M.D., Evansville
Willis A. Fromhold, M.D., Indianapolis
L.E. Gaul, M.D., Princeton, KY
Garland R. Gillespie, M.D., Brownstown
Jerome A. Graf, M.D., Bloomfield
Paul G. Hill, M.D., Eaton, OH
Robert W. King, M.D., Cedar Lake
Forrest E. Kirshman, M.D., Muncie
William W. Kriebel, M.D., Sea Island, GA (formerly of Terre Haute)
Donaldo E. Lacera, M.D., Munster
Jack M. Lockhart, M.D., Connersville
Bernard Lourie, M.D., Evansville
Wenceslao G. Magbag, M.D., Holland
Francisco S. Manalo, M.D., Marion
James M. McFadden, M.D., Lafayette
Walter M. Mikulaschek, M.D., Indianapolis
Hugh A. Miller, M.D., Constantine, MI
Leland J. Mortenson, M.D., Fort Wayne
Joseph L. Morton, M.D., Indianapolis
Harold R. Onyett, M.D., Poland
Morris B. Paynter, M.D., Noblesville

Jamie G. Ramos, M.D., Rochester
Carl S. Ray, M.D., Indianapolis
Roger R. Reed, M.D., Anderson
Thomas E. Reed, M.D., Indianapolis
Paul S. Rhoads, M.D., Richmond
John F. Rigg, M.D., North Palm Beach (formerly of Indianapolis)
Harold E. Ropp, M.D., New Harmony
Philip W. Rothrock, M.D., Lafayette
Hans Sahlmann, M.D., Fort Wayne
Rodger D. Saylor, M.D., LaPorte
William R. Shaffer, M.D., Greensburg
William A. Shuck, M.D., Lake Placid, FL (formerly of Madison)
Peter Stecy, M.D., Whiting
George A. Teaboldt, M.D., Indianapolis
Rohan L. Tiruchelvam, M.D., Marion
Harlan H. Tyner, M.D., Indianapolis
William E. Van Fleit, M.D., South Bend
Arthur L. Wagner, M.D., Jasper
Charles O. Weddle, M.D., Lebanon
Harold W. Williams, M.D., Indianapolis
Charles F. Willis, M.D., Evansville

Call to Order, Miscellaneous Business

District 7—William H. Beeson, M.D.

District 8—William C. VanNess II, M.D.

District 11—Jack Higgins, M.D.

Alternates:

District 7—John M. Records, M.D.

District 11—Laurence K. Musselman, M.D.

Dr. Michael B. DuBois, alternate trustee, District 7, succeeds to the office of trustee, District 7, due to the election of Dr. William Beeson to the office of vice speaker of the House of Delegates. On November 17, 1987, Dr. DuBois resigned his trustee position. Dr. John Records, alternate trustee, succeeded to trustee, District 7. According to the ISMA Bylaws, the president of the District Medical Society, Dr. Peter Winters, assumes the office of alternate trustee.

It was also reported for confirmation to the House that the Resident Medical Society's president is Dr. Michael Williams. By virtue of this position, Dr. Williams is also a non-voting trustee of the ISMA Board of Trustees. The RMS president-elect, Dr. Bob Darroca, is the alternate trustee of the ISMA Board. Each term is for one year.

Scientific Exhibit Awards

First Place: "Regulation of Transepithelial Fluid Movement in an *In Vitro* Model (MDCK-Cysts) of Renal Cyst Growth."

Exhibitors: M. Bradley Calobrace, J.A. McAteer, G.A. Tanner and A.P. Evan, Depts. of Anatomy and Physiology and Biophysics, Indiana University School of Medicine.

Second Place: "Electrically Conditioned Canine Skeletal Muscle Pouch

as a Cardiac Assist Device: Hydraulic Analysis."

Exhibitors: Boyd Marts, Randall Bills, Kathleen Klueber and Dr. John Brown, Indiana University School of Medicine.

Third Place: "Anti-TLX Antibody in Human Pregnancy."

Exhibitors: W. Page Faulk and John A. McIntyre, Laboratories for Transplantation and Reproductive Biology, Methodist Hospital of Indiana.

(Abstracts explaining each of these exhibits appear on page 65.)

Future Meetings

1988	Radisson	October 20-23
1989	Westin	October 26-29
1990	Radisson	November 1-4
1991	Westin	November 6-9
1992	Westin	November 12-15

Dr. Fred W. Dahling Chosen President-Elect

Dr. Fred W. Dahling of New Haven was chosen president-elect of the Indiana State Medical Association Nov. 8 during the 138th annual convention in Indianapolis.

He was elected by the 200-member House of Delegates during the final session of the House. He will assume the presidency of the ISMA at its 139th annual convention in October.

(Dr. John D. MacDougall of Beech Grove succeeded Dr. Shirley Thompson Khalouf as president.)

Dr. Dahling had been speaker of the House before his election; he became vice-speaker in 1983. He is a former chairman of the ISMA Board of Trustees.

Dr. Dahling, a 1956 graduate of Indiana University School of Medicine, has been in family practice since 1961.



Dr. Dahling

He served with the U.S. Army Medical Corps in Europe from 1957 to 1960.

He is certified by the American Board of Family Practice and is an active staff member of Lutheran and Parkview Memorial Hospitals in Fort Wayne. He is a former president of Lutheran Hospital, the Allen County Medical Society, and the Alumni Council, Indiana University School of Medicine. He has been an ISMA delegate since 1970 and since then has served on Reference Committees, the Commission on Public Relations, the IMPAC board, the Commission on Legislation and an ad hoc committee on malpractice. He is presently a member of the board of directors of the Fort Wayne Chamber of Commerce and the Concordia Educational Foundation.



ISMA Welcomes Its 145th President

JOHN D. MACDOUGALL, M.D.

**President
Indiana State Medical Association
1987-1988**

Dr. John D. MacDougall of Beech Grove accepted the presidency of the Indiana State Medical Association Nov. 8 during the final session of the House of Delegates at the 138th annual convention of the ISMA.

Dr. MacDougall succeeded Dr. Shirley Thompson Khalouf of Marion as president of the Association.

Dr. MacDougall is engaged in the private practice of surgery and is an assistant professor of surgery at Indiana University School of Medicine. He earned a B.S. degree and the M.D.

degree from Indiana University. He completed an internship and residency at the I.U. Medical Center. He is a diplomate of the American Board of Surgery and the American Board of Thoracic Surgery, and is a fellow of the American College of Surgeons.

Dr. MacDougall had been chairman of the ISMA Board of Trustees and a trustee of the Seventh District since 1983. He previously served as an alternate trustee, as chairman of the ISMA Commission on Medical Services, and as chairman of the ISMA Subcommis-

sion on Insurance. He was president of the Marion County Medical Society from 1978 to 1979.

Dr. MacDougall is a former president of the medical staff and chief of surgery at St. Francis Hospital, Beech Grove, where he is presently a member of the Advisory Board of Directors. He is a member of the active staff at University Heights Hospital in Indianapolis. In addition, he is a member of the Governor's Task Force on Organ Transplantation.

Addresses/Reports: Referrals to Reference Committees

Addresses	Reference Committee
President	1
President-elect	1
President, Auxiliary	5
President, Student Medical Society	5

Reports (Published in the October 1987 issue of INDIANA MEDICINE)

Chairman, Board of Trustees	1
Chairman, Executive Committee	1
Treasurer	1
Trustees	1
Editor, INDIANA MEDICINE	1
Resident Medical Society	5
Indiana Delegation to the AMA	6
Physicians Insurance Company of Indiana	4
Indiana Medical Foundation, Inc.	4
Commission on Constitution and Bylaws	2
Commission on Legislation	3
Commission on Medical Education	4
Commission on Medical Services	4
Commission on Physician Impairment	5
Commission on Public Relations	5
Commission on Sports Medicine	4
Ad Hoc Advisory Committee for Medicaid and Indigent Care	5
Ad Hoc Advisory Committee on Medical Malpractice	3
Future Planning Committee	5
Grievance Committee	5
Medical Education Fund Committee	4
Medico-Legal Committee	3
Negotiation Committee	5
Reduce Drunk Driving Committee	5

ALL OF THE ABOVE WERE *FILED* WITH THE EXCEPTION OF THE REPORT OF THE TREASURER WHICH WAS REFERRED FOR AUDIT.



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Please see summary of product information on following page.

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Before prescribing, please consult complete product information, a summary of which follows:

CONTRAINDICATIONS: Hypersensitivity to trimethoprim or sulfonamides; documented megaloblastic anemia due to folate deficiency; pregnancy at term and during the nursing period; infants less than two months of age

WARNINGS: FATALITIES ASSOCIATED WITH THE ADMINISTRATION OF SULFONAMIDES, ALTHOUGH RARE, HAVE OCCURRED DUE TO SEVERE REACTIONS, INCLUDING STEVENS-JOHNSON SYNDROME, TOXIC EPIDERMAL NECROLYSIS, FULMINANT HEPATIC NECROSIS, AGRANULOCYTOSIS, APLASTIC ANEMIA AND OTHER BLOOD DYSCRASIAS.

BACTRIM SHOULD BE DISCONTINUED AT THE FIRST APPEARANCE OF SKIN RASH OR ANY SIGN OF ADVERSE REACTION. Clinical signs, such as rash, sore throat, fever, pallor, purpura or jaundice, may be early indications of serious reactions. In rare instances a skin rash may be followed by more severe reactions, such as Stevens-Johnson syndrome, toxic epidermal necrolysis, hepatic necrosis or serious blood disorder. Perform complete blood counts frequently.

BACTRIM SHOULD NOT BE USED IN THE TREATMENT OF STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have a greater incidence of bacteriologic failure when treated with Bactrim than with penicillin.

PRECAUTIONS: General: Give with caution to patients with impaired renal or hepatic function, possible folate deficiency (e.g., elderly chronic alcoholics, patients on anticonvulsants, with malabsorption syndrome, or in malnutrition states) and severe allergies or bronchial asthma. In glucose-6-phosphate dehydrogenase deficient individuals, hemolysis may occur, frequently dose-related.

Use in the Elderly: May be increased risk of severe adverse reactions in elderly, particularly with complicating conditions, e.g., impaired kidney and/or liver function, concomitant use of other drugs. Severe skin reactions, generalized bone marrow suppression (see WARNINGS and ADVERSE REACTIONS) or a specific decrease in platelets (with or without purpura) are most frequently reported severe adverse reactions in elderly. In those concurrently receiving certain diuretics, primarily thiazides, increased incidence of thrombocytopenia with purpura reported. Make appropriate dosage adjustments for patients with impaired kidney function (see DOSAGE AND ADMINISTRATION).

Use in the Treatment of Pneumocystis Carinii Pneumonitis in Patients with Acquired Immunodeficiency Syndrome (AIDS): Because of unique immune dysfunction, AIDS patients may not tolerate or respond to Bactrim in same manner as non-AIDS patients. Incidence of side effects, particularly rash, fever, leukopenia, with Bactrim in AIDS patients treated for *Pneumocystis carinii* pneumonitis reported to be greatly increased compared with incidence normally associated with Bactrim in non-AIDS patients.

Information for Patients: Instruct patients to maintain adequate fluid intake to prevent crystalluria and stone formation.

Laboratory Tests: Perform complete blood counts frequently, if a significant reduction in the count of any formed blood element is noted, discontinue Bactrim. Perform urinalyses with careful microscopic examination and renal function tests during therapy, particularly for patients with impaired renal function.

Drug Interactions: In elderly patients concurrently receiving certain diuretics, primarily thiazides, an increased incidence of thrombocytopenia with purpura has been reported. Bactrim may prolong the prothrombin time in patients who are receiving the anticoagulant warfarin. Keep this in mind when Bactrim is given to patients already on anticoagulant therapy and reassess coagulation time. Bactrim may inhibit the hepatic metabolism of phenytoin. Given at a common clinical dosage, it increased the phenytoin half-life by 39% and decreased the phenytoin metabolic clearance rate by 27%. When giving these drugs concurrently be alert for possible excessive phenytoin effect. Sulfonamides can displace methotrexate from plasma protein binding sites, thus increasing free methotrexate concentrations.

Drug/Laboratory Test Interactions: Bactrim, specifically the trimethoprim component, can interfere with a serum methotrexate assay as determined by the competitive binding protein technique (CBPA) when a bacterial dihydrofolate reductase is used as the binding protein. No interference occurs if methotrexate is measured by a radioimmunoassay (RIA). The presence of trimethoprim and sulfamethoxazole may also interfere with the Jaffe alkaline picrate reaction assay for creatinine, resulting in overestimations of about 10% in the range of normal values.

Carcinogenesis, Mutagenesis, Impairment of Fertility: **Carcinogenesis:** Long-term studies in animals to evaluate carcinogenic potential not conducted with Bactrim. **Mutagenesis:** Bacterial mutagenic studies not performed with sulfamethoxazole and trimethoprim in combination. Trimethoprim demonstrated to be nonmutagenic in the Ames assay. No chromosomal damage observed in human leukocytes *in vitro* with sulfamethoxazole and trimethoprim alone or in combination, concentrations used exceeded blood levels of these compounds following therapy with Bactrim. Observations of leukocytes obtained from patients treated with Bactrim revealed no chromosomal abnormalities. **Impairment of Fertility:** No adverse effects on fertility or general reproductive performance observed in rats given oral dosages as high as 70 mg/kg/day trimethoprim plus 350 mg/kg/day sulfamethoxazole.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Trimethoprim and sulfamethoxazole may interfere with folate acid metabolism, use during pregnancy only if potential benefit justifies potential risk to fetus. Nonteratogenic Effects: See CONTRAINDICATIONS section.

Nursing Mothers: See CONTRAINDICATIONS section.

Pediatric Use: Not recommended for infants under two months (see INDICATIONS and CONTRAINDICATIONS sections).

ADVERSE REACTIONS: Most common are gastrointestinal disturbances (nausea, vomiting, anorexia) and allergic skin reactions (such as rash and urticaria). **FATALITIES ASSOCIATED WITH THE ADMINISTRATION OF SULFONAMIDES, ALTHOUGH RARE, HAVE OCCURRED DUE TO SEVERE REACTIONS, INCLUDING STEVENS-JOHNSON SYNDROME, TOXIC EPIDERMAL NECROLYSIS, FULMINANT HEPATIC NECROSIS, AGRANULOCYTOSIS, APLASTIC ANEMIA AND OTHER BLOOD DYSCRASIAS (SEE WARNINGS SECTION).**

Hematologic: Agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, neutropenia, hemolytic anemia, megaloblastic anemia, hypoprothrombinemia, methemoglobinemia, eosinophilia. **Allergic Reactions:** Stevens-Johnson syndrome, toxic epidermal necrolysis, anaphylaxis, allergic myocarditis, erythema multiforme, exfoliative dermatitis, angioedema, drug fever, chills, Henoch-Schoenlein purpura, serum sickness-like syndrome, generalized allergic reactions, generalized skin eruptions, photosensitivity, conjunctival and scleral injection, pruritus, urticaria and rash. **Periarthritis nodosa** and systemic lupus erythematosus have been reported. **Gastrointestinal:** Hepatitis (including cholestatic jaundice and hepatic necrosis), elevation of serum transaminase and bilirubin, pseudomembranous enterocolitis, pancreatitis, stomatitis, glossitis, nausea, emesis, abdominal pain, diarrhea, anorexia. **Genitourinary:** Renal failure, interstitial nephritis, BUN and serum creatinine elevation, toxic nephrosis with oliguria and anuria, crystalluria. **Neurologic:** Aseptic meningitis, convulsions, peripheral neuritis, ataxia, vertigo, tinnitus, headache. **Psychiatric:** Hallucinations, depression, apathy, nervousness. **Endocrine:** Sulfonamides bear certain chemical similarities to some goitrogens, diuretics (acetazolamide and the thiazides) and oral hypoglycemic agents: cross-sensitivity may exist. Diuresis and hypoglycemia have occurred rarely in patients receiving sulfonamides. **Musculoskeletal:** Arthralgia, myalgia. **Miscellaneous:** Weakness, fatigue, insomnia.

DOSAGE AND ADMINISTRATION: Not recommended for use in infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOIDIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN: Usual adult dosage for urinary tract infections is one DS tablet, two tablets or four teaspoonfuls (20 ml) b.i.d. for 10 to 14 days. Use identical daily dosage for 5 days for shigellosis. Recommended dosage for children with urinary tract infections or acute otitis media is 8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses every 12 hours for 10 days. Use identical daily dosage for 5 days for shigellosis. **Renal Impaired:** Creatinine clearance above 30 ml/min, give usual dosage, 15-30 ml/min, give one-half the usual regimen, below 15 ml/min, use not recommended.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS: Usual adult dosage is one DS tablet, two tablets or four teasp (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS: Recommended dosage is 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

HOW SUPPLIED: DS (double strength) Tablets (160 mg trimethoprim and 800 mg sulfamethoxazole)—bottles of 100, 250 and 500; Tel-E-Dose® packages of 100, Prescription Paks of 20. Tablets (80 mg trimethoprim and 400 mg sulfamethoxazole)—bottles of 100 and 500. Tel-E-Dose® packages of 100. Prescription Paks of 40. **Pediatric Suspension** (40 mg trimethoprim and 200 mg sulfamethoxazole per teasp.)—bottles of 100 ml and 16 oz (1 pint). **Suspension** (40 mg trimethoprim and 200 mg sulfamethoxazole per teasp.)—bottles of 16 oz (1 pint).

STORE: TABLETS AT 15°-30°C (59°-86°F) IN A DRY PLACE PROTECTED FROM LIGHT. **STORE SUSPENSION:** AT 15°-30°C (59°-86°F) PROTECTED FROM LIGHT.

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Robert W. Mouser, M.D., Indianapolis
Richard A. Schaphorst, M.D., Mishawaka
Thomas A. Brubaker, M.D., Munster

REFERENCE COMMITTEE NO. 4

Medical Education and Insurance

William K. Schmied, M.D., Jeffersonville, Chairman
Thomas Felger, M.D., Fort Wayne
Kenneth J. Ahler, M.D., Rensselaer
M. Barbara Backer, M.D., LaPorte
Donna Meade, M.D., Indianapolis
Harry D. Tunnell, II, M.D., Fort Wayne

REFERENCE COMMITTEE NO. 5

Miscellaneous

Virginia Wagner, M.D., Indianapolis, Chairman
Marty Sieg-Ross, Indianapolis
Paul J. Wenzler, M.D., Bloomington
Marvin E. Priddy, M.D., Fort Wayne
Barron M. Palmer, M.D., Hammond
George R. Weir, M.D., Brownstown

REFERENCE COMMITTEE NO. 6

AMA Matters

Edward D. Gourieux, M.D., Evansville, Chairman
Thomas R. Scherschel, M.D., Kokomo
Everett E. Bickers, M.D., Floyd's Knobs
Mark W. Bradley, M.D., Indianapolis
John Albert Carey, M.D., Gary
Charles Hachmeister, M.D., Evansville

I stand before you this morning to bring you the Presidential Address. I stand here with pride and humility that I have had the privilege of serving you and organized medicine in this capacity as president of ISMA this year. I also stand here with some sadness that "the year" is over, as it seems only yesterday I accepted the challenge of being your president.

As I look back on the year, I am proud of what the association has accomplished. Some of those accomplishments have been within the House of ISMA. Other achievements have been in the legislative arena, in the public health/public policy arena and in communications with our members.

Three issues in state legislation stand out and continue to be priorities: professional liability, physician dispensing, and our tobacco-free society efforts.

We have witnessed in the past few years an increase in the number and frequency of claims and reclassification of risk categories by insurance carriers, as well as an increase in the level of premiums charged. Since May, the surcharge on liability insurance premiums has been set at 125 percent.

To consider these issues and the overall professional liability environment in Indiana, I reappointed an Ad Hoc Advisory Committee on Medical Malpractice. Their charge is to review issues concerning the Medical Malpractice Act, Patients Compensation Fund solvency, as well as to develop recommendations for the future.

The committee's draft report is in progress. It makes 11 recommendations, which are too lengthy to go into here. However, they will be considered by the ISMA Board of Trustees soon and we will keep you informed on the outcome.

Physician dispensing is another issue that is still with us. Currently, the proposal in Congress is not dead, but it has not progressed in the past few weeks. ISMA opposed a bill introduced into the 105th session of the Indiana General Assembly, which subsequent-

ly did not pass. However, it appears similar legislation will be reintroduced.

The ISMA Department of Government Relations will continue to monitor the issue. Rest assured that ISMA will continue to fight for the right of physicians to dispense medications from their offices for the convenience and care of their patients.

In the public health/public policy arena, ISMA's Tobacco Free Society initiative met with tremendous success. You will recall, the 1986 House of Delegates directed the association to get involved in this important public health issue.

ISMA's first step was to spearhead a coalition of nearly 20 health-related organizations who share our interest in this health hazard.

As a result, when the smoke cleared away from the General Assembly this year . . . it really cleared away. What was left is a law which establishes designated non-smoking areas in government buildings, hospitals, health facilities and schools. Other victories included passage of a law to increase the minimum age for the sale of tobacco to minors from age 16 to 18, and an increase in the cigarette tax. In taking on this public health/public policy issue, ISMA gained positive media attention and thereby drew increased public attention to this most preventable cause of disease and death.

Also, this House of Delegates, because of the increasing concern regarding the possible prescription drug diversion problems, requested that ISMA bring to Indiana the PADS (Prescription Drug Abuse Data Synthesis) Program. Various groups concerned with this issue were brought together, several task force groups were formed, and then a consensus report on the findings was published. This report was presented to Governor Orr in July, and is now to be used as a resource by the Governor's appointed Prescription Abuse Study Committee.

Another point I want to talk about is our increased efforts at com-

municating with our members. In his book *Megatrends*, John Naisbitt says we live in an increasingly "high tech, high touch" society. Obviously, this is important to know in not only how we communicate with you, but with how you communicate with your patients.

We are looking at proven marketing tools, methods that work, to find out what you expect from ISMA and how we can service your requests. Soon you will receive our first annual membership survey.

As we look at programming for the future and the continuity with which we carry through on our various programs, your comments, wishes, and suggestions are extremely important.

Our other avenues of communication are through our field staff and our publications. Our field staff make a concerted effort to see you in your local settings. They are your direct link to information. As always, your questions regarding laws and legislation, public relations, membership, financial packages and insurance can be answered by calling ISMA headquarters directly.

Through our publications, ISMA REPORTS and INDIANA MEDICINE, we try to give you up-to-date information on the changes we face daily in the delivery of medical care. ISMA REPORTS underwent a face-lift this year, design changes to make the newsletter easier to read. The November issue of INDIANA MEDICINE contains the first monthly "Stethoscope" column, which examines state and national legislative issues. ISMA is striving to provide you with what you need to know when you need to know it.

In the past two months, we have witnessed the government's attempt to mandate some disturbing changes in the Medicare program. First, the government announced a premium increase of 38.5 percent. Then, HCFA announced that it would seek Congressional approval to curtail face-to-face Medicare appeals and supplant that system with telephone appeals, hiring

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its own administrative law judges to conduct the telephone hearings.

In mid-October, HCFA followed up with an announcement that it plans to develop a list of "preferred provider" doctors who were described as those who practice conservative medicine. According to the plan, Medicare would pay more for care delivered by doctors on the list. No discounts would be given to beneficiaries who wished to seek treatment from doctors not named on the list.

All of these changes follow closely behind the "Big MAAC" attack physicians have experienced this year.

The recent changes which the government proposes concern me, as I am sure they concern you. As physicians, we must continue to support our patients' right to seek care from the doctor they choose, not from a government list.

Unfortunately, the widespread, but erroneous reports that the premium increase is due to physicians raising their fees received much media coverage. Reports like that cast a shadow over the physician-patient relationship and erode the doctor's responsibility as the patient's advocate.

What we obviously need is a lot more problem-solving and a lot less finger-pointing. What the public and especially our older patients need to know is that for physicians, quality medical care is the priority. Taking care of patients is our utmost concern. Each of us needs to convey that message to our patients.

I have talked a great deal about the things that have happened during the past year, now it seems only appropriate that I give you some recommendations for the future—as I see it today. Some recommendations are "in-house" items, some are not.

Finances

Our financial status at this time is sound, as the executive director and the officers have been ever watchful and frugal in conducting business. However, our reserves must be in-

creased, and we must have working capital available to carry out proposed projects which may arise in the near or distant future. Please follow the treasurer's report closely as it is given in Reference Committee #1.

Commissions/Committee Review

A full review of ISMA's commission and committee numbers, structure, purpose and function must be done so the organization can be streamlined to function under current times. This has already been started, and must be continued, with full report to this House of Delegates next year.

Membership

Encourage fellow physicians to belong to organized medicine. It is not enough to be a physician. You must show interest in the medical profession. I realize I am speaking to you who are active, but I plead with you to "spread the gospel" at home.

Male and female physicians, age 35 to 44, make up the largest segment of our membership, and the percentage of female physicians is increasing. It is important that these young people become active members of ISMA and that ISMA respond appropriately to today's physician. For this reason I have appointed ad hoc committees on the young physician and the female physician. We look forward to the committee reports.

Auxiliary

We are grateful to the ISMA Medical Auxiliary for their outstanding work on behalf of Indiana medicine—physicians and patients. I would like to see us utilize the assistance of the auxiliary, through state and especially local county levels, to help physicians in presenting health projects to the public.

Older Hoosiers

Since our Hoosier population over age 65, as elsewhere, is increasing rapidly, it is important that we maintain a geriatric committee—whether

that be as a separate committee or as a subcommittee of an already standing commission or committee.

Under this same topic of Older Hoosiers, I want to see continued strong alliance with the Indiana Federation of Older Hoosiers, as our respective organizations benefit from this regular communication on at least a semiannual basis. In addition, I would recommend that ISMA develop a system to stimulate formal local dialogue between the county medical societies and the county retiree groups. Communication through this local grass root method is the best way to help one another in dealing with the impositions on medical care delivery.

Interspecialty Meetings

Communication among our members must be enhanced. Although many of us are in different specialties, we are all physicians with common concerns, especially in the legislative arena. It confuses the legislators and looks bad for medicine if we do not present a united voice in public. Therefore, I recommend that the interspecialty group, representing the officers of the Indiana Specialty Societies or their chosen representative, meet semiannually with ISMA leadership.

I could go on and on—but by now you must be tired of listening. However, I want to leave you with one thought. I feel strongly that ISMA should represent the membership—our profession—from parties who seek to control the practice of medicine or perhaps worse—from those who would seek to use the physician and the patient consumer in a business profit-making atmosphere.

This does not mean that change should not or will not occur in the manner in which we practice—just as our diagnostic and therapeutic tools have changed over the years. However, medicine is a profession and the diagnostic judgment of the patient's needs and the delivery of appropriate care must not be controlled by those from without. Just as feverishly,

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though, we must discourage members of our own profession from being unethical as it relates to both the practice of medicine and the business issues of medicine—being ever mindful of our Hippocratic Oath to serve others.

We physicians know what medicine stands for and we know what is appropriate medical care and what may adversely affect the quality of and access to health care. However, it is not enough that *we* know. We must *individually* (and collectively through ISMA, the AMA, and our specialty societies) discuss with and educate our patients, our friends, and our

legislators on the issues.

Just think how effective this organization, this profession, could be if each of us took the time to give only two people per week the appropriate information on only one issue. But, we need to use accurate information—not old tails or anecdotes—and we need to count on the ISMA and the AMA to supply us with that data regularly.

To continue to have an impact on the many medical quandaries facing this state and country today, ISMA needs the support and action of all of us. Our strength as an organization is only as great as the commitment of our

members.

In conclusion this morning, I want to tell you, the membership, how fortunate we are to have such a dedicated and capable staff working for us. I thank the executive director and each staff member for their cooperative support of me this year.

May I take this moment to thank you, the members of this House of Delegates and your respective county members, for having given me the opportunity to serve you as your organization's president. My association with the membership and with you, the ISMA staff, will always be cherished.

Address of the President-elect

John D. MacDougall, M.D.

One year ago when I stood before you and thanked you for my election I remarked that this was the greatest honor of my professional career. I would like to remind you now that I felt so honored because of the great esteem in which I hold this House of Delegates. You are members of an exclusive club. Each of you attained a level of distinction when you became a physician, and then when you were chosen by your county society or district to be its representative in this body, you achieved an honored status indeed, and incidentally, responsibilities commensurate with that honor. A word about those later.

We have been very fortunate during this past year to have had Dr. Shirley Thompson Khalouf as our first woman president. I shall not enumerate the many ways in which she served so ably, but I would like to mention two features that characterized her presidency which I felt were particularly outstanding. First, as we knew she would, she exhibited a deep

sense of fiscal responsibility in all of our deliberations, and this may have been related to the years she served on the Executive Committee before assuming the presidency—the Executive Committee, of course, being the financial committee of this association. A second feature I would like to mention was her consistent poise and clarity of expression when she appeared as our spokeswoman in meetings of all sorts, including interviews and press conferences. The preparedness she achieved during her years as vice-speaker and speaker of this House was readily apparent. I should like to take this opportunity to express my personal thanks to her as well as the thanks of this House of Delegates for her outstanding year as our president.

Last year, as a candidate for president-elect, I visited with several of your delegations, and I repeatedly stated that if I succeeded to the office of the presidency it was my intention not to be a caretaker president, but to make a commitment of the time and

energy necessary to provide vigorous leadership. I repeat that commitment at this time.

It is customary in this address for the president-elect to outline an agenda for the forthcoming year. The first and most important item on my agenda will be to serve as an executive officer, to work together with the Board of Trustees and the executive staff to implement the policies as expressed by this House of Delegates. This House is constitutionally the policy-making body of the association, and the resolutions that it adopts after due consideration and discussion in the reference committees and debate in the second session of the House, will have the highest priority of business in the new association year.

A second priority of mine will be that of membership retention and membership development. We have identified approximately 650 physicians in Indiana who are not members of their county societies or this association. There are 3,136 physicians in In-

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diana who are not members of the American Medical Association. I view this as fertile ground for our efforts. Our executive director, Mr. Richard King, our director of financial services and membership, Mr. John Wilson, and I attended a membership development seminar conducted by the membership department of the American Medical Association, and we gained some knowledge about membership development activities that we intend to put to use. This will require a broad and vigorous effort reaching out to all the counties of our state, and I expect each of you as a respected leader in your district and county to participate.

It is my hope that before the next 100 days have passed that each identifiable nonmember physician in Indiana will have been personally invited by a member physician to join his county and state association. We will then continue throughout the year to pursue ISMA and AMA membership recruitment. To the degree that this effort is successful, proportionate benefits will accrue both to the physicians involved and to the association. Through the publications of ISMA and AMA the new members will benefit from increased knowledge of events in the world at large which affect their patients, and the political and economic climate in which they practice. The association will benefit from the increased fiscal support and perhaps increased numerical representation at the AMA House of Delegates.

The third priority that I wish to emphasize is to continue to develop and strengthen the fiscal soundness of our association which was emphasized by Dr. Khalouf during the past year. Dr. Arvine Popplewell, during his tenure as treasurer and later as president, enunciated a policy that the fiscal reserves of the association should be equal to one year's budget. Since that time, due largely to inflation, the amount of our annual budget has steadily increased, and because of decreased interest rates in recent years, the income from the reserve

fund has decreased, until now, our reserve fund falls short by 54% of equaling a year's budget. Restoration of our reserve funds to that level is a laudable goal for two important reasons. The first, of course, is to insure that our association would be able to weather any financial storm, which without adequate reserves, might threaten the solvency of the association. The second, and perhaps not as readily apparent reason, is the fact that the income from our reserve funds constitutes a very important non-dues source of revenue.

We have another important non-dues source of revenue, and these are the funds we derive from our membership services activities. You are familiar with the membership services packet developed by our director of Member Services, Mr. Michael Huntley, which describes the many items and services available through the association at very competitive and in some instances rather deeply discounted prices. Included are the purchase of automobiles and cellular telephones, credit card services, membership in the Wholesale Club, rental car services and a host of others.

To the degree that these services are utilized, and to the degree that our reserve funds are able to generate investment income, the need for dues income is proportionately decreased. So you can see why it is advantageous to each of us for the association to have an abundant reserve fund and also to have broad participation in our membership services. I urge you as leaders of the association to utilize these services and to encourage your colleagues in their broader use. Our treasurer, Dr. George Rawls, has prepared a report which you will find in your handbook. Please review this report so that you will have a clear understanding of our financial status and be better prepared to understand our proposals for continuing fiscal responsibility.

My fourth agenda priority is the area of legislation. Our Legislation

Commission, under the able leadership of Dr. Ed Langston, is one of our most active commissions. It meets regularly throughout the year, and during the period that our Indiana State Legislature is in session, it meets monthly. Resolutions passed by this House which deal with legislation are referred to this commission. The commission pays close attention to all legislative bills that have medical and health implications. Working together, our executive director and the director of Government Relations, Mrs. Julie Newland, provide weekly reports to the Board of Trustees and other interested persons, so that an ISMA position can be developed on all important pieces of health legislation. You may then ask how are our positions translated into effective action on the floor of our Indiana State Legislature. This is accomplished by a concerted year-round communication effort between members of our staff, members of the legislative commission, the Board of Trustees, and individual association members with the legislators.

During the time that the Legislature is in session, individual legislators are bombarded with a continuum of information and misinformation presented to them by a wide variety of groups and individuals with the purpose of influencing their vote on bills under consideration. They pay attention to this information to a more or less degree and to more or less degree appreciate having information presented to them in a clear and succinct fashion for their consideration. It is my belief, however, that they pay greater attention to the concerns of their constituency as expressed to them in one-on-one communication from the people in their own districts which they represent.

At this point, I would like to pause and ask for a show of hands from this body; I would like to ask how many of you know your state representative on a personal basis and have spoken with him during the past year. This response is somewhat encouraging, but I believe that it clearly illustrates that

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we have much work to be done. I am now going to call upon you to fulfill one of the responsibilities I alluded to earlier. Monday morning when you return to your office, before you go through the stack of mail that awaits you, before you answer the urgent telephone calls with which you are presented, I am asking each of you to take five minutes and call your state representative.

Tell him or her that you have just returned from the annual meeting of the Indiana State Medical Association, that you served there as a delegate, and that you are very interested in medical and health legislation, and that you would be happy to consult with him concerning such legislation as it is presented during the forthcoming session of the Legislature. I can promise you that he will be delightfully surprised and will remember your name and your position of responsibility. He will be pleased to know that he has someone in his own community that he knows and trusts, upon whom he can depend for an evaluation of conflicting information that he may be receiving in Indianapolis. In order to make this easy for you to do, our staff has provided each of you with the name, address, and telephone number of your district representative, and I charge you to remember—first thing Monday morning.

A discussion of legislative efforts would be far from complete without mention of IMPAC and AMPAC, the political action committees of our state association and the American Medical Association. The major activity of these organizations, of course, is to solicit voluntary contributions from our membership and then to make appropriate contributions to the political campaigns of candidates for public office. Other very worthwhile activities of these organizations include the dissemination of important political information and the presentation of educational seminars for our members and our auxiliaries in the subtleties and techniques of political activity.

There are those who criticize political action committees as pressure groups attempting to exert undue influence on legislation through economic power. I disagree completely with those critics. In this modern age of sophisticated communication techniques, it is extremely important for a candidate for political office to get a fair hearing and to have his campaign message broadly disseminated. It is a fact of political life that this has become very expensive. Unless we are willing to give a great advantage to candidates with large personal fortunes, or candidates who are very well funded by a few wealthy contributors, it becomes necessary for a mechanism to be developed to provide worthy candidates with a large number of smaller contributions to insure broad representation. This is what political action committees are all about, and in my view, they are the essence of democracy in action.

Do the contributions that IMPAC and AMPAC make buy votes? Of course not. The great majority of legislators are just as dedicated and conscientious about conducting their activities honestly and fairly as the great majority of physicians are equally conscientious about providing their patients with the best medical care. What, then, do our contributions accomplish? They provide us with a fair hearing. When a member of the Indiana State Medical Association sends a letter or a telegram or calls a legislator, that message is given careful attention. When representatives of our association make a Washington visitation and call for appointments, every effort is made to accommodate our schedule, and however busy the representative or senator may be he will arrange, if at all possible, to spend time with us and give attention to our concerns, and careful evaluation to our points of view. To the degree that we have then done our job and can present our views in a logical and convincing way, we can have that degree of influence upon legislation that we

deserve.

Is this effort effective? What has organized medicine been able to do for you lately? Let me cite a recent example.

Eleven months ago, during the first week of December, during the American Medical Association Interim Meeting of the House of Delegates in Las Vegas, the Health Care Financing Administration proposed that hospital-based physicians—radiologists, pathologists and anesthesiologists—be placed under DRG reimbursement. The Washington Office of the AMA promptly relayed that information to the executive vice president, Dr. James Sammons, at the meeting in Las Vegas. He came to the podium and, with fire in his eye, pointed out that this was not an issue that involved only three specialty groups, but this was an issue that affected all physicians in America. He made a commitment that all the resources available to the association to contest this proposal would be brought to bear to prevent this complete restructuring of the traditional economic pattern of physician reimbursement.

Through these efforts, a concurrent resolution was presented in both houses of Congress, and through an intense lobbying effort by the association a majority of members of both houses of Congress were persuaded to become signatories to these resolutions, and when the proposal was considered to put this DRG reimbursement into effect it was soundly defeated. I cite this as only a very recent and very visible result of the political activities of your association.

In a recent mailing you received your dues statement for the forthcoming year. You will note there is an optional item of \$100 for a sustaining membership in IMPAC and AMPAC. For a second hundred dollars your spouse can also be a sustaining member. Many of IMPAC's most effective members in political activity are members of our auxiliary. Under the leadership of President Anne Throop,

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legislative efforts have a very high priority in our state auxiliary. I know of very few physicians in Indiana who cannot afford \$200 over the period of a whole year to sustain this important activity. Unless you consider yourself a hardship case, I want you to include this \$200 voluntary contribution, along with your annual dues.

What will you get for your \$200? First of all you will get the satisfaction of knowing that you are carrying your share of this important load. You will have a greater incentive to communicate with the legislators from your district, both on a state and national level. You will feel more entitled to their attention. You and your spouse will also receive a lapel button which says 99+. I urge you to wear it to the hospital, to the doctor's lounge, to the Medical Society meetings. Some of those you encounter there will not know what it means. One or more may even ask you. When that occurs, you can think to yourself, "I gotcha!" This will be your opportunity to explain to him the importance of becoming a sustaining member.

It is my hope that in this way, during the forthcoming year, we can substantially increase our contributions to this important effort, and increase proportionately its effectiveness. In this, as in the legislative and membership recruitment activities, there is no substitute for one-on-one physician-to-physician contact, and again I look to you as the leaders in your counties and districts for an active effort in this regard, again a reminder of your responsibility.

Having emphasized these four areas for special attention does not at all mean that the other activities of our association are less important or less worthy of attention. I expect our other commissions and committees to move forward under strong leadership.

The Commission on Medical Services, chaired by Dr. Alfred Cox, conducted its business with efficiency during the past year, and its recommendations to the board were most

appropriate.

The Commission on Physician Impairment has done an outstanding job under the leadership of its founder and chairman for the first five years, Dr. Larry Davis, and more recently under the chairmanship of Dr. Fred Blix. It has been able to help physicians salvage themselves from the ravages of the symptoms of stress illness, including drug and alcohol abuse, so that their talents can remain available to their patients and the community, truly one of the finest activities of our association.

We expect our Commission on Sports Medicine, under the able leadership of Dr. Ronald Blankenbaker, to have an increasing visibility and importance as our state becomes more and more identified as an international sports center.

Traditionally, a very important responsibility of our association has been its role in medical education and accreditation. Our Commission on Medical Education, chaired by Dr. Franklin Bryan, has functioned very responsibly in this area.

The Commission on Public Relations, under the chairmanship of Dr. John Osborne and more recently Dr. Adrian Lanning, developed the "Healthy, Happy and Wise" public education video series, which was widely circulated. This commission has been active in other areas, getting our message to the public on a variety of issues; not the least important of its activities has been responding to headline stories in the public media, correcting distortions of fact which tend to put physicians and our profession in a bad light. The competence of our director of Public Relations, Adele Lash, has been very evident in the activities of this important commission.

The Future Planning Committee, chaired by Dr. William VanNess II, was a very active committee during the past year, during which a complete study and analysis of our entire organization was conducted and a comprehensive report and recommenda-

tions presented to the Board of Trustees. Many of these recommendations have been referred to commissions and other committees and one of these recommendations is under consideration at this meeting in the form of a resolution.

Time does not permit me to mention all of our commissions and committees, but I want to emphasize that all of their activities are important and I expect those of you who have accepted commission and committee appointments to live up to your commitment by regular attendance and by doing your homework before you come to the meetings so that you can represent your district effectively and contribute to the ferment of ideas which is the essence of committee activity and leads to innovative and progressive recommendations to the board.

And now before I conclude, I would like to take a moment to put the forthcoming year in a kind of historical perspective since we are embarking on the 139th year of this association. The organizational meeting of this association occurred on June 6, 1849, at 10 o'clock in the morning in the Wesley Chapel in Indianapolis. A nominating committee was appointed and Dr. Livingston Dunlap was elected president. The meeting lasted for two days and by the end of the meeting a total of 84 members were registered in the association.

Since that time, there has been an unbroken chain of leadership, with 139 consecutive presidents who have been willing to give of their time and energy for this association. Many of these men have succeeded to leadership in the American Medical Association, many have served on councils and committees of the AMA, several have been elected to the Board of Trustees, and some have served as chairmen of the Board of Trustees.

Three of our former presidents have succeeded to the presidency of the American Medical Association. The first of these was Dr. Theophilus T. Parvin of Indianapolis in 1879, subse-

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quently, Dr. James F. Hibberd of Richmond in 1894, and most recently, Dr. Roscoe L. Sensenich of South Bend in 1948. During the early years of the association, a major emphasis was on the exchange of scientific and medical information, but throughout its history it has concerned itself with public health, medical education and medical legislation on both a state and national level. Its very durability attests to its importance and with the increasing complexity of medical science and the increasing diversity of clinical interests of its practitioners, the need for a single state-wide organization to represent all physicians becomes increasingly important. Especially today when the economic and social pressures from

governmental, industrial and commercial organizations are exerting an increasingly heavy hand and influence on the modes of medical practice, we must heed the continuing call for effective medical leadership.

If there is one response that I would like to evoke in each of you, if there is one emotion whose resonating chord I would like to strike, it is that of exuberance and enthusiasm. Again I emphasize that you in this room are the true leaders of this association. It is to you that the individual practitioners in your local society look for leadership. To the degree that you can exhibit enthusiasm and can evoke an enthusiastic response in your local society for participation, the forthcoming year of this

association can be one of accomplishment.

Be mindful of the association and your responsibility to it. Give some time each day and each week to its consideration. You have earned the right to practice medicine in a free society and your patients deserve your unrestrained best efforts unhampered by rationing or restriction due to someone else's economic constraints. These are rights worth fighting for and worth exhorting your colleagues to help fight for.

And so I say, generate some enthusiasm, get the juices flowing, Fire Up!, and go out and help us make it a good year.

Address of the Chairman, Medical Student Society

Cheryl McDonald

Ladies and gentlemen of the Indiana State Medical Association, it is my pleasure and privilege as chairman of the Indiana State Medical Student Society to report to you the exciting progress we've made. United little more than three years ago, we have grown from a fledgling organization with a skeleton framework to a group with well-defined leadership by a governing council and active supporting members, some of whom serve on various ISMA commissions. This advancement could not have been achieved without your continued support and encouragement.

We are now able to initiate projects that will help us attain our goal of enhancing medical student education and providing unique services to our community.

It is a difficult task to motivate very busy medical students to become involved with additional activities, but we are currently undertaking a project that by its very nature has generated interest and volunteer workers. Patterned after an idea presented at the annual AMA-MSS Convention, we are

now working on a program entitled "Student to Student." Medical students will teach public and parochial school students "The Dangers of Smoking" and "The Dangers of Drug and Alcohol Abuse." The foundations for this are currently being laid and expanded upon. Medical school faculty members contacted thus far have all been very supportive and willing to help. We hope that as students ourselves we will be able to establish a rapport and trust that will effectively communicate these important messages from "student to student."

We are furthering our service efforts by investigating potential speakers to address issues of concern to medical students. We hope to touch on such subjects as medical ethics, debt management, the legal realm of prescription writing and other topics to enhance our medical education.

We are also reaching out to our eight regional campuses and strengthening our communications. In fact, this year the secretary/treasurer of our governing council is at the Ball State campus. Based upon the large enrollment at

regional campuses, it is highly likely that at the interim meeting of the AMA-MSS Indiana will obtain an additional delegate and alternate delegate to represent these students.

Not only are we making strides on a state and local level, but we have had an impact on a national level as well. In this past year we have had members on the AMA-MSS Nominating Committee and on a reference committee. We currently have a member serving as chairperson of the AMA-MSS Committee for Long Range Planning. Indiana students have had direct impact on AMA-adopted resolutions involving such topics as AIDS and generic drug identification.

In closing, we're proud of our progress and certain we will enjoy future success. Speaking on behalf of all medical students in Indiana, we thank you not only for your financial support, but also for making Indiana such a great place to learn and to potentially practice medicine. It is our hope that in return we can demonstrate our appreciation by the benefits of our endeavors at state and national levels.

Thank you for giving the Auxiliary president this annual opportunity to address your House of Delegates.

The Auxiliary is alive and well, getting stronger with each year, venturing into medically related areas with confidence and knowledge that we have the qualifications necessary to make a real difference in our communities. I guess we could say "You've come a long way, baby"—although that catchy term came from a certain cigarette commercial, and is possibly not an appropriate one for an organization dedicated to the concept of a "Smoke-Free Society" at some point in the future. Nevertheless, it is true—we are celebrating our 60th year, and we have come a long way from that day back in 1927, when a group of women, and they were all women in those days, decided to organize an auxiliary in the state of Indiana, and become affiliated with a national organization which had already been in existence five years. The noble purpose of this organization was to further the interests of the medical profession and promoting good relations among medical families—in other words, a support group! We will not forget that we are first and foremost a support system for each other, and I think we agree there is no one that needs it more at this point in time!

"Advocates for Medicine," our chosen theme for this year, is intended to inspire us to work for greater public awareness of the forces that are eroding your relationship with your patients. We want *you* to be able to be "patient advocates" as you have heard it stated by your president, Dr. Shirley Khalouf, this year.

Whether *we* succeed is directly related to establishing credibility with the public through community involvement in areas where we will achieve much needed visibility.

Adolescent health has always been a major focus of auxiliary activities. We are now being asked to step up these efforts by joining the AMA in its Adolescent Health Initiative. To assure

success in this important campaign, the 1987-1988 AMA Auxiliary president, Betty Szewczyk, has asked every county auxiliary in the country to plan at least one adolescent health project. In our state we already have counties working with teen suicide hotlines, distributing informational literature and posters, anti-smoking programs for school kids, and teaching seat belt safety to driver education classes.

During this convention the auxiliary will sponsor a two-hour seminar for spouses on the topic of adolescent health. The AMA was instrumental in helping coordinate this event, and we are indeed grateful.

In addition, the AMA Auxiliary has been asked to participate in setting the national agenda for the White House Conference on a Drug-Free America to be held in Washington D.C. February 28-March 2, 1988. As the Auxiliary representative from this state, I will be attending a three-day Regional Conference in Cincinnati on November 16, 17 and 18, 1987. The AMA is involved in the planning of these conferences, offering a special opportunity for each state to have input into the national agenda being developed on drug abuse.

As an auxiliary we are dedicated to the establishment of sound health policy, as well as joining you in your fight to keep your practice of medicine free from government intervention. Our goal is to establish a statewide phonebank to compliment the key contact system already in effect. A phonebank can react to an alert on shorter notice, and we are encouraging legislative study groups in the counties in order to become knowledgeable enough on the issues to be effective in our efforts.

If we can be truly helpful in these two areas we will be well on our way to fulfilling our commitments to you and your profession.

With your help in fundraising for the AMA Education and Research Foundation, we accomplished the 25% increase necessary for national recognition last year, and that translates into

more dollars for medical education here in the state of Indiana—more than \$65,000 last year. Nationally, the Auxiliary raised \$1.5 million for AMA-ERF—no small accomplishment.

Leadership training demands much of the state board's attention, because this is our way of passing information and programs to the counties where they are implemented. We have had four workshops this year. In May we sponsored a membership workshop, with emphasis on communications skills, and in September we traveled to the three geographical areas of the state with a program dealing with project and leadership skills development, geared to future leaders. This we do very well, thanks to the excellent training provided our state officers and chairmen by the AMA Auxiliary.

This year we are actively in pursuit of re-establishing contact with the Resident and Student Medical Societies. We want all spouses-in-training to be familiar with the Auxiliary, and how they may be able to impact on their future, and ours, by becoming a part of our organization.

I want to leave you with a little challenge. We think our organization is worthy of attention from every physician's spouse in this state. We cannot carry out our goals without members, and I urge you to encourage your spouses to become active in auxiliary—*county, state and national* for maximum power!

I have enjoyed working with Dr. Khalouf and I am looking forward to working with your incoming president, Dr. John MacDougall.

We thank the ISMA staff for all their help—without it we could not function on the scale that we do. Thank you for giving me your courteous attention today. We think *you* are pretty great—we also think *we* are pretty great—and if we all work together—how can all that "greatness" fail?

Scientific Exhibit Winners

First Place

Regulation of Transepithelial Fluid Movement in an In Vitro Model (MDCK-Cysts) of Renal Cyst Growth

Exhibitors: M. Bradley Calobrace, J.A. McAteer, G.A. Tanner and A.P. Evan, Depts. of Anatomy and Physiology and Biophysics, Indiana University School of Medicine.

Polycystic Kidney Disease (PKD) is characterized by the formation of large fluid-filled epithelial cysts. It is hypothesized that cyst growth is linked to altered water and solute transport (increased secretion or decreased reabsorption) by the tubule epithelium.

We investigated the role of trans-epithelial fluid movement in cyst enlargement using a unique cell culture model (MDCK-cysts) of renal cyst growth. Like renal cysts in PKD, MDCK-cysts accumulate fluid and grow in diameter by mitotic division.

Fluid secretion was altered using Furosemide (F), an inhibitor of $\text{Na}^+/\text{K}^+/\text{2Cl}^-$ co-transport. Reabsorption was blocked by the inhibitory action of Amiloride (AM) on the Na^+/H^+ antiporter. F (0.1-10.0 mM) or AM (0.025-1.0 mM) were administered in the medium and cyst growth in diameter (greater than 100 cysts per condition) was monitored over 35 days. AM stimulated and F inhibited cyst growth compared to untreated controls, both in a dose dependent manner ($P < 0.001$).

These data show that cyst fluid accumulation can be altered by F and AM. Inhibition of secretion (basal to apical transport) in response to F can result in reduced fluid accumulation. Enhanced cyst growth following AM suggests increased fluid retention due to decreased reabsorption. Our data demonstrate that cyst size in a model of renal cyst growth can be regulated by pharmacologic agents known to alter water and salt transport by renal epithelium, which may be valuable in the study of the mechanisms involved in renal cyst growth.

Second Place

Electrically Conditioned Canine Skeletal Muscle Pouch as a Cardiac Assist Device: Hydraulic Analysis

Exhibitors: Boyd Marts, Randall Bills, Kathleen Klueber and Dr. John Brown, I.U. School of Medicine.

Previous attempts to use a skeletal muscle pouch (MP) as the power source for a cardiac assist device (CAD) were unsuccessful due to muscle fatigue.

Electrical stimulation will convert a normal skeletal muscle of mixed myofiber types to 100% fatigue-resistant myofibers. Power produced by the converted muscle under simulated cardiac conditions has not been evaluated.

This study evaluates the simulated cardiac performance of the normal rectus abdominis (RA) skeletal MP (Group 1, $N=5$) and the fatigue resistant RA skeletal MP (Group 2, $N=5$), using cardiac functions for comparison.

The RA, encasing a reservoir, was connected to a hydraulic circuit (preload—40 mm Hg, afterload—60 mm Hg), and stimulated by a Grass stimulator (Group 1: 1 Hz, 350 msec on cycle, 3V, 53 pulse [50 μ sec pulse duration] pulse train/on cycle; Group 2: 1 Hz, 350 msec on cycle, 4.5 V, 33 pulse [100 μ sec pulse duration] pulse train/on cycle).

The powers (mWatts/g) generated by the MP and the right (RV) and left (LV) ventricles were compared. Initial Group 1 powers were: MP-5.03, RV-2.06, LV-6.69. After four hours, the power values were: MP-1.91 (-62%), RV-2.06 (-0%), LV-5.67 (-15%). Initial Group 2 powers were: MP-0.81, RV-2.61, LV-8.18. After four hours, the power values were: MP-1.89 (+233%), RV-1.38 (-47%), LV-4.65 (-43%).

The normal MP fatigued after four hours, but the converted MP did not fatigue, producing 38%, 72%, and 23% of the initial normal MP, RV, and LV powers, respectively. Thus, an electrically conditioned skeletal MP can produce the power required to augment cardiac workload without fatigue.

Third Place

Anti-TLX Antibody in Human Pregnancy

Exhibitors: W. Page Faulk and John A. McIntyre, Laboratories for Transplantation and Reproductive Biology, Methodist Hospital of Indiana.

Pregnant mammals produce antibodies which bind paternal lymphocytes *in vitro*. These immunoglobulins are not specific for Class I or II major histocompatibility antigens, and it is not possible to describe their specificity by using traditional lymphocytotoxicity tests with MHC-typed donors.

Lymphocytotoxicity of these sera can be removed by absorption with HLA-negative trophoblast membranes or HLA-unrelated platelets. Binding of trophoblast or platelet substrates in ELISA by maternal sera before, but not after trophoblast absorption, is further evidence of a role for anti-trophoblast immunity in pregnancy.

Rabbit antisera to human trophoblast are also lymphocytotoxic, and their patterns of cytotoxicity on lymphocytes in a 30-member select-cell-panel of HLA-typed donors have defined three groups of antigens. This allotropy is confirmed by trophoblast and platelet absorption data which show removal of human antipaternal activity by some, but not all membranes.

These observations have led to the concept of trophoblast-lymphocyte cross-reactive (TLX) antigens as participants in the array of extraembryonic MHC and non-MHC encoded immunogens that signal maternal immune recognition and protection of blastocysts during implantation and embryogenesis. This concept is supported by observations that some recurrent spontaneous aborters do not produce anti-TLX unless they receive prophylactic immunotherapy, and other spontaneous aborters produce IgG subclass-restricted anti-TLX which kills paternal lymphocytes and mouse blastocysts *in vitro* unless the sera are absorbed with trophoblast.

1987 ISMA Journalism Awards

For Excellence in Health and Medical Reporting

In the TV-single story category, Clyde Lee, co-anchor of WRTV - Channel 6 news in Indianapolis, won with his entry, "Rural Doctors." The story aired in January 1987 and focused on the ratio of physicians practicing in rural Indiana. The story intended to make viewers aware of what factors affect a physician's decision on where to practice and how rural residents perceive the doctor's decision.

Clyde Lee won again in the TV-series category with his entry, "Heart Care." The series examined the major risk factors of heart disease, explained several conventional procedures to correct damage done by coronary artery disease, and emphasized ways people can increase their odds for living a healthier life.

Another Indianapolis journalist, Kelly Vaughn (Campbell), formerly of WTLC-FM in Indianapolis, won in the

radio category with her entry, "Walk, Not Run." The story focused on the benefits of exercising by walking vs. running.

In the print-single story category, a team of reporters from the *Fort Wayne Journal-Gazette* won with their entry entitled, "AIDS." The story focused on how AIDS has affected the Fort Wayne

community and how widespread the disease has become.

Tom Price, reporter for the *Elkhart Truth*, won the print-series category with his entry, "Exploring the Mind." The eight-part series explained the different concepts and complexities of the mind, mental illness, and the brain and human personality.



THE WINNERS—From left, Kelly Vaughn Campbell, WTLC-FM; Clyde Lee, WRTV-Channel 6; Dr. Shirley Thompson Khalouf; Blair Claflin and John Schroeder, Fort Wayne Journal-Gazette; and Tom Price, Elkhart Truth.

Entries for the annual ISMA Journalism Awards competition must be submitted to ISMA headquarters through the county medical society.

Entries are judged (by the Commission on Public Relations) on the basis of health and medical accuracy, significance, quality, interest and impact on the general public.

1987 Physician Community Service Award

Samuel M. Wentworth, M.D. Danville

The Indiana State Medical Association awarded its 1987 Physician Community Service Award to Samuel M. Wentworth, M.D., of Danville.

In addition to his active practice in pediatrics, Dr. Wentworth serves as medical director of the Indiana Camp for Children with Diabetes in Brown County, and as assistant director of the Diabetes Care Center of Indianapolis. He also serves on the board of directors of Happy Hollow Children's Camp in Ladoga, Indiana, a camp for Indianapolis inner-city children. Dr. Wentworth's professional focus is on the educational aspects of diabetes, and he is listed in the speakers bureau of Eli Lilly and Company.

Dr. Wentworth has been the recipient of the Sertoma Club of Lawrence's Service to Mankind Award, the John H. Warvel Outstanding Service to Indiana Diabetes Association Award (1976), and the American Diabetes Association's Youth Award (1979).

He is a member of the Hendricks County Medical Society, the Indiana State Medical Association, the American Medical Association, the Indiana Diabetes Association, the American Diabetes Association, and the American Diabetes Association—New England Affiliate. Dr. Wentworth is a sustaining alumni member of the Boy Scouts of America, a member of the national executives group of the American Camping Association, and an active member of Northview Christian Church.

Dr. Wentworth and his wife Sondra are foster parents through the Indiana Christian Children's Home and Hendricks County. They also have two



Dr. Wentworth and his wife Sondra.

children of their own, Barbara (Wentworth) McClure and David Wentworth.

Dr. Wentworth was honored with the 1987 ISMA Journalism Award win-

ners at a luncheon on Friday (Nov. 6), following the award presentation at the Radisson Plaza Hotel—Indianapolis, during ISMA's annual convention.

A defense against cancer can be cooked up in your kitchen.

There is evidence that diet and cancer are related. Some foods may promote cancer, while others may protect you from it.

Foods related to lowering the risk of cancer of the larynx and esophagus all have high amounts of carotene, a form of Vitamin A which is in cantaloupes, peaches, broccolies, spinach, all dark green leafy vegetables, sweet potatoes, carrots, pumpkin, winter squash, and tomatoes, citrus fruits and brussels sprouts.

Foods that may help reduce the risk of gastrointestinal and respiratory tract cancer are cabbage, broccoli, brussels sprouts, kohlrabi, cauliflower.

Fruits, vegetables and whole-grain cereals such as oatmeal, bran and wheat may help lower the risk of colorectal cancer.

Foods high in fats, salt- or nitrite-cured foods such as ham, and fish and types of sausages smoked by traditional methods should be eaten in moderation.

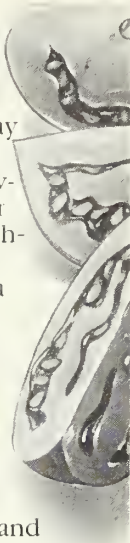
Be moderate in consumption of alcohol also.

A good rule of thumb is cut down on fat and don't be fat. Weight reduction may lower cancer risk. Our 12-year study of nearly a million Americans uncovered high cancer risks particularly among people 40% or more overweight.

Now, more than ever, we know you can cook up your own defense against cancer. So eat healthy and be healthy.

No one faces
cancer alone.

 AMERICAN CANCER SOCIETY®



CARAFATE®

(sucralfate)

BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate.

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that the simultaneous administration of CARAFATE with tetracycline, phenytoin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. The clinical significance of these animal studies is yet to be defined.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No evidence of drug-related tumorigenicity was found in chronic oral toxicity studies of 24 months' duration conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies have not been conducted.

Pregnancy: Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients, adverse effects were reported in 121 (4.7%). Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED

CARAFATE (sucralfate) 1-gm pink tablets are supplied in bottles of 100 and in Unit Dose Identification Packs of 100. The tablets are embossed with MARION/1712

Issued 3/84

References:

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1594H7

Ulcer therapy that won't yield, even to smoking



What do you do for duodenal ulcer patients who should stop smoking, but won't? Both cimetidine¹ and ranitidine² have been shown less effective in smokers than nonsmokers.

Choose CARAFATE® (sucralfate/Marion). Two recent studies show Carafate to be as effective in smokers as nonsmokers.^{3,4} A difference further illustrated in a 283-patient study comparing sucralfate to cimetidine⁵:

Ulcer healing rates:
(at four weeks of therapy)⁵

Sucralfate:

All patients 79.4%

Smokers 81.6%*

Cimetidine:

All patients 76.3%

Smokers 62.5%

*Significantly greater than cimetidine smoker group ($P < .05$)

Carafate has a unique, nonsystemic mode of action that enhances the body's own ulcer healing ability and protects the damaged mucosa from further injury.

When your ulcer patient is a smoker, prescribe the ulcer medication that won't go up in smoke: safe, nonsystemic Carafate.

Nothing works like


CARAFATE®
sucralfate/Marion

Please see adjoining page for references and brief summary of prescribing information.

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Motrin[®] 800 TABLETS mg

ibuprofen



Extra strength
Convenience
Economy

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A Century
of Caring
1886-1986

Resolutions

RESOLUTION 87-1 BYLAWS CHANGE IN SECTION 12.04, MEDICAL STUDENT SOCIETY

Introduced by: ISMA-Medical Student Society
 Referred to: Reference Committee 2
 ACTION: Referred to the Board of Trustees

~~Student Medical Society shall submit to ISMA each year a roster of medical students actively enrolled in an accredited medical school in Indiana.~~

CODE: --- Deletion
 — Addition (underlined)

Whereas, The medical students of the Indiana University School of Medicine organized into a Component Medical Society in April 1985 with a Governing Council and Bylaws; and

Whereas, The Medical Student Society is now electing the student delegate and alternate delegate to represent the Indiana University School of Medicine at the AMA and ISMA meetings; and

Whereas, Section 12.0402 of the ISMA Bylaws does not accurately reflect the way the Medical Student Society is organized; therefore be it

RESOLVED, That Section 12.04 be amended as follows:

12.04 MEDICAL STUDENT SOCIETY

12.0401 Composition: Medical students actively enrolled in an accredited medical school in Indiana are members of this society with all rights and privileges as described in 1.0104.

12.0402 ~~Organization: The Student Council of the Indiana University School of Medicine shall elect a student delegate and alternate delegate from nominees presented to them from each class. All resolutions introduced in the name of the student body must be presented through the Student Council functioning as the executive body of the student members in effect, a student component society.~~

12.0402 Organization: The Medical Student Society will hold its annual meeting with the election of the Governing Council and the election of the delegate and alternate delegate to the AMA and ISMA. All resolutions shall be introduced at its annual meeting and approved by the ISMA-MSS Governing Council, prior to submission to the ISMA House of Delegates.

12.0403 Dues: Medical student members shall be assessed no dues, but may subscribe to *Indiana Medicine* at the current rate determined from time to time by the Board of Trustees.

~~12.0404 Secretarial Duties: The Secretary of the~~

RESOLUTION 87-2 REGARDING RESOLUTION 85-8 AND RESOLUTION 86-44, "ISMA MEMBERSHIP SUSPENSION AS A RESULT OF MEDICAL LICENSING BOARD SUSPENSION"

Introduced by: Board of Trustees
 Referred to: Reference Committee 2
 ACTION: Adopted as amended

Whereas, The 1985 House of Delegates *did not pass* Resolution 85-8 but did refer it to the Board of Trustees for consideration; and

Whereas, The 1985 Reference Committee recommended that ISMA address those members whose licenses have been *suspended* by the Medical Licensing Board of Indiana; and

Whereas, Resolution 86-44 dealing with this issue proposed certain Bylaw language that the House referred back to the Board for clarification; and

Whereas, After review and consideration by the Board of Trustees, it is felt that a change in Bylaw language regarding this issue should be addressed; therefore be it

RESOLVED, That Section 1.0303 of the Indiana State Medical Association Bylaws be amended as follows:

1.0303 (a) Suspension or Revocation of License: No person whose license to practice medicine has been suspended or revoked by the Medical Licensing Board of Indiana or who is under sentence of suspension or expulsion from a component society, or whose name has been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Association or of a component society, nor shall said person be permitted to take part in any of their proceedings until the license and/or component membership has been restored. ~~This shall not apply to physicians who have surrendered their license because of retirement under the provisions of the Medical Practice Law.~~

Resolutions

(b) Exception: A member of the Indiana State Medical Association who is impaired by neuropsychiatric illness, physical infirmity, alcohol or other substance dependence, and who has submitted himself to the ISMA Commission on Physician Impairment or a comparable county or hospital impaired physician committee, may continue as a member of ISMA with full membership privileges, even after suspension of his license by the Medical Licensing Board if he is actively cooperating with an appropriate impaired physician committee and is making satisfactory progress in his rehabilitation. It is incumbent upon the impaired physician to provide the ISMA Commission on Physician Impairment with semiannual reports from the impaired physician committee with which he is cooperating, documenting his cooperation and satisfactory progress in rehabilitation; and be it further

RESOLVED, That Section 1.0101, REGULAR MEMBER, be amended as follows (addition underlined):

1.0101 REGULAR MEMBER: The term "Regular Member" as used in these Bylaws shall be:
1) Except as specified in 1.0303, a person who holds the degree of Doctor of Medicine or Bachelor of Medicine, or who holds an unrestricted license to practice medicine . . .

and be it further

RESOLVED, That Subsection 4.02 of Section 4.00, OFFICERS, of the Indiana State Medical Association be amended as follows (addition underlined):

4.02 REMOVAL, DEATH, RESIGNATION, VACANCY: Any officer may be removed from office after a hearing before the Board, on thirty days notice, based on charges in writing, upon a vote of three-fourths of the members of the Board. A hearing shall be mandatory if a license is suspended or revoked by the Medical Licensing Board of Indiana.

CODE: --- Deletion

— Addition (underlined)

RESOLUTION 87-3 SURCHARGE TO THE INDIANA PATIENTS COMPENSATION FUND

Introduced by: Lake County Medical Society
Referred to: Reference Committee 4
ACTION: Amended and Referred to Board of Trustees

Whereas, The Indiana Patients Compensation Fund was intended as a uniform approach to a statewide problem; and

Whereas, As originally intended, premiums throughout the state of Indiana were to be uniform for various classes of practice; and

Whereas, Recent acts by the Insurance Commissioner in approving liability rates now allow different geographic rating areas; and

Whereas, Overall premiums should be adjusted to assure uniform treatment of all categories of a particular insurer among all areas of the state; therefore be it

RESOLVED, That ISMA support legislation requiring the Insurance Commissioner to determine the individual surcharge to the Patients Compensation Fund to assure that a set dollar amount be imposed on each different type of health care provider, regardless of geographical location.

RESOLUTION 87-4 THREE-DAY CONVENTION FORMAT

Introduced by: Commission on Convention Arrangements
Referred to: Reference Committee 5
ACTION: Adopted

Whereas, Resolution 84-19 called for a Thursday through Sunday format for the Indiana State Medical Association Annual Meeting; and

Whereas, The cost of conducting a four-day meeting has continued to escalate; and

Whereas, Seventy-six percent (76%) of those ISMA members who frequently attend the Annual Meeting and who responded to a questionnaire following the 1986 Annual Meeting said they preferred the meeting to last three (3) days and be held on Friday, Saturday and Sunday; and

Whereas, Streamlining the annual convention was recommended by the Future Planning Committee in its 1986 Future Planning Study; and

Whereas, The Commission on Convention Ar-

Resolutions

rangements has considered proposed format and schedule changes and has determined that the business of the annual meeting can be concluded in three days; therefore be it

RESOLVED, That the 1988 and 1989 Indiana State Medical Association Annual Meetings be a three-day event with evaluation following, and a determination for the length of future Annual Meetings be made by the 1989 Indiana State Medical Association House of Delegates.

RESOLUTION 87-5 QUALIFICATIONS FOR PROVIDING EXPERT MEDICAL OPINION

Introduced by: Lake County Medical Society
Referred to: Reference Committee 4
ACTION: Adopted

Whereas, Some amount of disagreement exists among the legal profession as to who can render an expert medical opinion for purposes of legal proceedings; and

Whereas, There is disagreement among medical professionals as to who can render an expert medical opinion for purposes of legal proceedings; and

Whereas, A definition of who can render such an opinion would be beneficial for parties to legal suits, medical panels, and other legal proceedings; and

Whereas, Such a definition should be intended as an aid to all interested parties in obtaining such an opinion; and

Whereas, Such a definition should be limited to law suits or medical review panels wherein any medical standard of care is in question; therefore be it

RESOLVED, That ISMA develop, either alone or in conjunction with other interested groups, a definition of who is qualified to provide expert medical opinion for all legal purposes in which a medical standard of care is at issue.

RESOLUTION 87-6 ADMINISTRATION OF THE PATIENTS COMPENSATION FUND

Introduced by: Lake County Medical Society
Referred to: Reference Committee 4
ACTION: Adopted

Whereas, The Patients Compensation Fund is presently administered under the Indiana Insurance Commissioner who is responsible for many other

duties in addition to the administration of the fund; and

Whereas, as presently administered, payout is largely determined by negotiation and is not administered by individuals exclusively assigned to the fund; and

Whereas, No statutory mandate requires specific, legal "defense" of the fund; and

Whereas, Defense of the fund is needed to assure that only the appropriate amounts will be paid and should not be intended nor used to prevent otherwise proved and lawful amounts for payment; therefore be it

RESOLVED, That ISMA support legislation establishing an office of independent management and legal counsel for purposes of professional administration and management of the Patients Compensation Fund.

RESOLUTION 87-7 DISTRIBUTION OF TRUSTEES AND ALTERNATE TRUSTEES

Introduced by: Third District Medical Society
Referred to: Reference Committee 2
ACTION: Not Adopted

Whereas, The Indiana State Medical Association's Board of Directors is composed of trustees from various districts; and

Whereas, Grassroots involvement is enhanced by broad geographical representation; therefore be it

RESOLVED, That the appropriate ISMA body study and report to the 1988 House of Delegates, the feasibility of allowing a particular county to one trustee or one alternate trustee unless 50 percent of the members of that district reside in said county.

District	Trustee	Alternate Trustee
1	Vanderburgh	Vanderburgh
2	Monroe	Knox
3	Clark	Clark
4	Bartholomew	Jefferson
5	Vigo	Putnam
6	Wayne	Hancock
7	Marion	Johnson
7	Marion	Marion
8	Madison	Delaware
9	Fountain	Hamilton
10	Lake	Porter
11	Howard	Cass
12	LaGrange	Allen
13	Elkhart	St. Joseph

Resolutions

RESOLUTION 87-8 INDIANA MEDICAL HISTORY MUSEUM

Introduced by: Tippecanoe County and Carroll County
Referred to: Reference Committee 5
ACTION: Adopted

Whereas, The Indiana State Medical Association is interested in medicine in the state of Indiana; and

Whereas, The Indiana State Medical Association is interested in educating its members about medicine past, present, and future; and

Whereas, The Indiana State Medical Association is also interested in educating the public about medicine past, present, and future; and

Whereas, The Indiana Medical History Museum has these same interests and could greatly assist the Indiana State Medical Association in attaining these educational goals through private and public exhibits and educational programs; therefore be it

RESOLVED, That the Indiana Medical History Museum shall be provided a prominent exhibit area, free of charge, at each annual meeting of the Indiana State Medical Association.

Fiscal Note: Minimum of \$500 per exhibit

RESOLUTION 87-9 NURSING HOME CARE

Introduced by: Ad Hoc Committee on Geriatrics
Referred to: Reference Committee 4
ACTION: Referred to the Board of Trustees

Whereas, Physicians have an essential role in the delivery of medical care across the continuum of the health care system; and

Whereas, The care of the chronically ill or frail elderly necessitates physician assessment and intervention on a regular and timely basis, and physician visits to a nursing home assure that medical knowledge and skills are incorporated into the care of residents and can provide knowledge, education, and psychosocial support for the patient, patient's family, and other care givers; and

Whereas, Given recent Medicare reimbursement changes, the complexity and severity of medical problems of persons in nursing homes is increasing which in turn increases the need for physician involvement; and

Whereas, The traditional ethical and legal commit-

ment of physicians to patient care dictates that physicians assume direct and ongoing responsibility for the medical care of nursing home patients—part of that commitment being to ensure that nursing home residents have access to medical services that are comparable in quality to those provided in the community; and

Whereas, The chronic nature of most nursing home residents' illnesses requires ongoing physician attention to the psychological support and education of patients and families as well as the treatment of the disease itself; and

Whereas, Improved access will require education of physicians concerning the problems and needs of nursing home residents as well as incentives, including adequate reimbursement, that will attract highly qualified physicians to the nursing home setting; and

Whereas, Personal medical care in nursing homes should encompass the usual areas of medical practice such as the care of acute episodic illnesses and monitoring of chronic disease. It should also include participation in the assessment of need for rehabilitation or maintenance therapy to improve or maintain patient function and the provision of education and psychological support for the patient's family and other care givers. The physician should be an active member of the team of professionals providing care in the nursing home; and

Whereas, Physicians providing medical direction in nursing homes have a responsibility to provide leadership in developing, implementing, and carrying out policies and procedures concerning at least these areas: organizing and allocating services; educating non-physician staff providing clinical care; assuring appropriate use of beds and resources; assessing quality of care; granting and reviewing privileges of physicians and non-physician medical practitioners; participating in care decisions that affect a person's longevity and quality of life; therefore be it

RESOLVED, That medical societies, legislative bodies, and regulatory agencies should work to ensure that a sufficient number of motivated and knowledgeable physicians are available to provide personal medical care and medical direction in nursing homes; and be it further

RESOLVED, That frequency of physician visits to nursing home residents should be based on the patient's needs; and be it further

RESOLVED, That all physicians who provide care in nursing homes should be willing to participate in and support the activities outlined above.

Resolutions

RESOLUTION 87-10 COLLEGE HEALTH PHYSICIANS SECTION

Introduced by: ISMA Commission on Constitution and Bylaws
Referred to: Reference Committee 2
ACTION: Adopted

Whereas, The purpose of a specialty section of the Indiana State Medical Association is to provide a forum in ISMA and its House of Delegates; and

Whereas, Each section is required to have an election of officers and a minimum of one meeting annually; and

Whereas, The College Health Physicians Section is not active and has had no elections or meetings for a number of years, thereby not fulfilling the requirements as outlined in Section 3.03 of the ISMA Bylaws; therefore be it

RESOLVED, That "(c) College Health Physicians" be deleted from 3.030103 of the Bylaws and the following listed sections be alphabetized sequentially.

RESOLUTION 87-11 NAME CHANGE FOR MEDICO-LEGAL COMMITTEE

Introduced by: Medico-Legal Committee
Referred to: Reference Committee 2
ACTION: Adopted

Whereas, The current ISMA Constitution and Bylaws makes reference to the "Medico-Legal Committee" throughout the Bylaws; and

Whereas, The more current term for a committee of this nature is referred to as the "Medico-Legal Committee"; therefore be it

RESOLVED, that the ISMA Constitution and Bylaws be amended to replace the term, "Medico-Legal Committee" with the term, "Medical-Legal Committee" wherever same appears.

RESOLUTION 87-12 MISSION STATEMENT — ISMA CONSTITUTION

Introduced by: Future Planning Committee
Referred to: Reference Committee 2
ACTION: Adopted as amended
(To be published twice during the year in *Indiana Medicine*; to be resubmitted and voted on at the 1988 House of Delegates)

Whereas, The ISMA Constitution contains the following mission statement:

Article II—Purposes

"The purposes of this Association shall be to federate and bring into one compact organization the medical profession of the state of Indiana, and to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education; to promote friendly relations among physicians; to protect its members against imposition; and to enlighten and direct public opinion in regard to the great problems of medical care and public health so that the profession shall become more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life."

Whereas, This statement does not completely coincide with the directions that ISMA has taken in the past decade and it is not completely relevant in today's dramatically changing medical practice environment, and

Whereas, The current mission statement over-emphasizes ISMA's activities and expertise in scientific and educational areas (activities that can be better handled by the medical school, specialty societies and hospitals), and

Whereas, The current mission statement notes the social role of the Association, which for many members has been supplanted by other organizations, and

Whereas, The statement makes no explicit mention of ISMA's role of representing physicians, one of the Association's most recognized activities of recent years, therefore be it

RESOLVED, That Article II—Purposes, of the ISMA Constitution, be modified to read:

"The Indiana State Medical Association shall diligently serve its members so that they can better care for their patients and the public and thereby add to the quality and comfort of life. The goals of the Association to accomplish this mission are:

- A. Organize the medical profession in Indiana and to unite with other medical societies to participate in the American Medical Association;
- B. Commit to the active support of medical education at all levels in order to advance medical knowledge and medical science;
- C. Represent members' interest in the governmental, public, and private sectors;
- D. Inform physicians and the public about health care issues;
- E. Promote effective freedom of choice for pa-

Resolutions

- tients, physicians, and the public; and
F. Protect its members and their patients from imposition."

RESOLUTION 87-13 SMOKING IN PUBLIC HEALTH FACILITIES

Introduced by: Boone County Medical Society
Referred to: Reference Committee 3
ACTION: Adopted as amended

Whereas, Smoking of cigarettes has been established as a health hazard; and

Whereas, Inhalation of cigarette smoke by non-smokers has been established as detrimental to health; and

Whereas, Indiana medicine and medical facilities should be examples of good public health practices; and

Whereas, Some other states have banned smoking in public health facilities; therefore, be it

RESOLVED, That the Indiana State Medical Association seek state legislation to ban smoking in all areas of all hospitals and all other public health facilities.

RESOLUTION 87-14 PRESCRIPTION DRUG ABUSE EDUCATION

Introduced by: Edward Langston, M.D.
Referred to: Reference Committee 3
ACTION: Adopted

Whereas, The Prescription Abuse Data Synthesis Program (PADS) in Indiana has resulted in a final report being issued to Governor Orr; and

Whereas, The final report contained several recommendations regarding an interprofessional approach to reducing the incidence of the prescription drug abuse and diversion problems in Indiana; and

Whereas, The Indiana State Medical Association in cooperation with the Governor's Office has highlighted several problem areas and suggested recommendations for helping to curtail prescription drug diversion; therefore be it

RESOLVED, That the ISMA work aggressively to make its members aware of the final findings of the PADS Report and to lend assistance to the county medical societies in the areas of professional education regarding prescription drug abuse and diversion and the important role the physician plays in helping to deter this abuse or diversion.

RESOLUTION 87-15 INDIANA MEDICAL HISTORICAL MUSEUM

Introduced by: Neal Petry, M.D., Delegate, Carroll County
Referred to: Reference Committee 5
ACTION: Adopted

Whereas, The membership of ISMA has annually demonstrated its support of the Indiana Medical Historical Museum by its contributions toward the annual operating budget; and

Whereas, The Museum has negotiated a long-term lease with the State of Indiana for The Old Pathology Building and surrounding grounds at Central State Hospital Complex; and

Whereas, Recent evidence indicates that this building is the only one of its kind in this country and the world; and

Whereas, The Old Pathology Building is in need of major restoration and refurbishing in order to preserve the building and create an effective facility as a museum; therefore be it

RESOLVED, That the ISMA endorse the concept of a Museum Renovation Campaign; and be it further

RESOLVED, That the ISMA encourage all members to enthusiastically participate in this endeavor in whatever way they may feel is the most effective.

RESOLUTION 87-16 NOTIFICATION OF MEDICAL SOCIETIES AND HOSPITALS BY THE MEDICAL LICENSING BOARD OF INDIANA (HEALTH PROFESSIONS SERVICE BUREAU)

Introduced by: Owen-Monroe County Medical Society
Referred to: Reference Committee 3
ACTION: Adopted as amended

Whereas, The Health Professions Service Bureau is imbued with the responsibility of protecting the public health and the authority to enforce this protection by means of suspending medical licenses; and

Whereas, The Indiana State Medical Association is concerned that proper continuity of patient care be insured for those patients whose physicians' licenses are suspended or otherwise limited by the Health Professions Service Bureau; and

Whereas, The lack of immediate license suspension notification from the Health Professions Service

Resolutions

Bureau to the suspended physician's hospital and colleagues threatens not only the patient's health but also poses an extreme legal liability to hospitals and physicians who unknowingly associate with the suspended physician; therefore be it

RESOLVED, That the Indiana State Medical Association consult with the Health Professions Service Bureau to establish a better method whereby the Health Professions Service Bureau will immediately notify the appropriate entities of actions taken.

RESOLUTION 87-17 MEMBERS ON COMMISSION ON MEDICAL EDUCATION

Introduced by: Commission on Medical Education
Referred to: Reference Committee 4
ACTION: Adopted

Whereas, Continued input from the Indiana University School of Medicine to the endeavors of the Commission on Medical Education of ISMA is important and should be assured; and

Whereas, Continued communication with the Association of Indiana Directors of Medical Education (AIDME) is also vital to the function of the Commission on Medical Education and should be assured; therefore be it

RESOLVED, That the Commission on Medical Education maintain in its membership a faculty member of the I.U. School of Medicine and a member of AIDME, appointed annually by the President upon recommendation of the Chairman of the Commission.

RESOLUTION 87-18 DISPENSING MEDICATIONS FROM THE OFFICE

Introduced by: Thomas Neathamer, M.D.
Referred to: Reference Committee 4
ACTION: Adopted

Whereas, The physician who is licensed to practice medicine in Indiana is permitted under Indiana law to be engaged in the "diagnosis, treatment, correction, or prevention of any disease, ailment, defect, or injury ... or the suggestion, recommendation or prescription or administration of any form of treatment, *without limitation* ..." and

Whereas, the right, as defined in state law, of the physician to dispense medications from the office is in recognition of this time-honored tradition, and

Whereas, Physicians recognize the responsibility to comply with applicable rules and laws on the proper methods of dispensing medications from the office as part of their overall duty to ensure that the medical care rendered to that patient is of an optimal quality, therefore be it

RESOLVED, That the Indiana State Medical Association oppose any legislative or regulatory attempts that would deny the physician the legal and professional right to dispense medications from the office, and be it further

RESOLVED, That the ISMA continue to keep its members informed about the proper guidelines and procedures for dispensing medications from the office.

RESOLUTION 87-19 PRESCRIPTION DRUG MISUSE

Introduced by: Hospital Medical Staff Section
Referred to: Reference Committee 3
ACTION: Adopted as amended

Whereas, Felonious prescription drug misuse has many causes of which two are readily controllable by physicians and pharmacists, to wit:

- 1) A legal and medically approved prescription can be altered by readily forged changes in the numeric designation of the number of doses to be dispensed (example: number 10 can be altered to number 100) and
- 2) "Patients" may present themselves to numerous physicians with sufficiently plausible signs and symptoms to obtain prescriptions for psychotropic drugs and controlled substances; therefore be it

RESOLVED, That the Indiana State Medical Association consider modification in part of the second recommendation to the Governor in the Prescription Abuse Data Synthesis Report to require that the designation on a prescription of the number of doses to be dispensed be spelled out *and* designated numerically (i.e., "ten" *and* "10").

RESOLUTION 87-20 PENALTIES FOR FISCAL INTERMEDIARIES WHO DO NOT REIMBURSE PATIENTS PROMPTLY

Introduced by: Grant County Medical Society
Referred to: Reference Committee 3
ACTION: Adopted as amended

Resolutions

Whereas, Health Care Financing Agency and the fiscal intermediaries have stipulated various penalties to Medicare providers, such as the exclusion from Medicare programs for failing to make refunds on a timely basis, but have neglected to impose similar penalties on the Medicare carriers for similar offenses; and

Whereas, A series of newspaper articles in 1986 and 1987 has documented different types of incorrect calculation of patient reimbursements as well as widespread delays of reimbursement of Medicare patients throughout Indiana, which at one time reached a backlog of 450,000 delayed claims; therefore be it

RESOLVED, That ISMA will seek imposition of federal and/or state sanctions on the insurance carriers which do not reimburse patients promptly or correctly.

RESOLUTION 87-21 HEALTH PLAN EVALUATION

Introduced by: Grant County Medical Society
Referred to: Reference Committee 5
ACTION: Not adopted

Whereas, There is a shortage of concise information available to patients and to others (unions, management, physicians, etc.) to help them evaluate health care plans and contracts; therefore be it

RESOLVED, ISMA prepare appropriate informational material to be made available to interested parties to aid in evaluation and development of health care plans and policies.

Fiscal Note: \$2,500.

RESOLUTION 87-22 INSURER PERFORMANCE REVIEW NETWORK

Introduced by: Grant County Medical Society
Referred to: Reference Committee 3
ACTION: Referred to Board of Trustees

Whereas, There are multiple problems with the accuracy and timeliness of insurer and fiscal intermediary payments to both patients and physicians; and

Whereas, There frequently is unequal treatment by insurers and fiscal intermediaries of both patients and doctors in currently circulated regulations, contracts, and agreements; therefore be it

RESOLVED, That ISMA and the AMA establish a mechanism for reviewing and monitoring perform-

ance of insurers and fiscal intermediaries; and be it further

RESOLVED, That this mechanism at the state level cooperate with and encourage formation of insurer review entities, such as the Grant County Medical Society Insurer Review Committee; and be it further

RESOLVED, That the ISMA Delegation carry this issue to the national level.

Fiscal Note: \$62,500 per year.

RESOLUTION 87-23 OFFICE OF SPEAKER AND VICE SPEAKER

Introduced by: Grant County Medical Society
Referred to: Reference Committee 2
ACTION: Adopted

Whereas, The resolution creating the office of Speaker and Vice Speaker was introduced by Grant County; and

Whereas, It was the intent that the Speaker and Vice Speaker would be elected from the delegate members of the House; and

Whereas, The present bylaws state that the Speaker and Vice Speaker are elected from the membership of the House of Delegates including Delegate, Trustee, and Past President; therefore be it.

RESOLVED, That the bylaws be changed to state that the Speaker and Vice Speaker will be elected from the delegate members of the House.

RESOLUTION 87-24 FEDERAL DEFINITION OF "USUAL," "CUSTOMARY," "PREVAILING" AND "REASONABLE"

Introduced by: Robert Jackson, MD; Paula Oliver, MD; Laurence Musselman, MD; Roland Paegle, MD; John Pattison, MD; and endorsed by the Patient Advocate Committee and the Insurer Review Committee of the Grant County Medical Society

Referred to: Reference Committee 3
ACTION: Adopted

Whereas, The Health Care Financing Administration restricts Medicare reimbursement to the "lowest of" several arithmetic calculations; and

Resolutions

Whereas, The Health Care Financing Administration has named these arithmetic calculations: "usual," "customary," "prevailing" and "reasonable" and

Whereas, The Health Care Financing Administration's definitions of these words are dramatically different from the definitions used by the rest of the English-speaking world; and

Whereas, The Health Care Financing Administration's unusual definitions of these common words create suspicion and antagonism among patients and physicians alike; therefore be it

RESOLVED, That the Indiana State Medical Association, utilizing its delegation to the American Medical Association and all other appropriate resources, attempt to require the Federal Government to use common definitions of terms as found in a standard dictionary.

RESOLUTION 87-25 RESIDENT PHYSICIAN EDUCATION

Introduced by: R. B. Juergens, M.D.
Referred to: Reference Committee 4
ACTION: Adopted

Whereas, The goal of the Primary Physician Resident is to secure a broad medical education; and

Whereas, A physician by oath is an educator; and

Whereas, Increasing competition in the medical field is inducing hospital medical departments and medical specialty organizations to create policies to withhold knowledge and expertise; therefore be it

RESOLVED, That the Indiana State Medical Association condemn the withholding of education as a means of obtaining an advantage in our competitive medical environment; and be it further

RESOLVED, That the Indiana State Medical Association bring a resolution to the American Medical Association House of Delegates meeting to condemn such practices.

RESOLUTION 87-26 PATIENTS' COMPENSATION FUND

Introduced by: Vigo County Medical Society
Referred to: Reference Committee 3
ACTION: Not adopted

Whereas, There appears to be a continual near-depletion of the Patients' Compensation Fund (PCF); and

Whereas, The surcharge on the physician's liability

insurance premiums has reached 125 percent with future increases probable; and

Whereas, There does not yet appear to be adequate defense of the PCF to preserve it; therefore be it

RESOLVED, That additional pressures be encouraged by the ISMA to guide the Insurance Commissioner and/or the legislature to protect the PCF, and be it further

RESOLVED, That the person or persons responsible for defending the PCF be paid a small percent of the average savings per case from the PCF as an incentive to protect undue expenditures from the PCF.

RESOLUTION 87-27 PHYSICIAN EXEMPTION FROM JURY DUTY

Introduced by: Vanderburgh County Medical Society
Referred to: Reference Committee 3
ACTION: Not adopted

Whereas, Indiana law exempts other professions from serving jury duty; and

Whereas, Physicians are not exempted under Indiana law from jury duty; and

Whereas, physicians have ongoing responsibilities to patients to provide medical care; and

Whereas, The typical jury duty notification is not of sufficient advance time to allow the physician to block a schedule of surgery and/or follow-up care, leaving as an alternative the cancellation and/or rescheduling of patient appointments; and

Whereas, In the overall picture, the availability of one's physician would seem to be of at least equal importance as the availability of those in the exempted profession; therefore be it

RESOLVED, That the ISMA introduce or cause to be introduced an amendment to this State's law (or new legislation) calling for the exclusion of physicians from jury duty or the repeal of the exclusion of any other professions from jury duty.

RESOLUTION 87-28 NEW ISMA SPECIALTY SECTION

Introduced by: Physicians Practicing Physical Medicine and Rehabilitation
Referred to: Reference Committee 2
ACTION: Adopted

Whereas, Those physicians practicing Physical

Resolutions

Medicine and Rehabilitation in the State of Indiana wish to become a recognized specialty section within ISMA; and

Whereas, This properly constituted resolution was included with the signatures (a minimum of 15 members/25% of the members) of those who are practicing this specialty in the State of Indiana, and these signatures are on file in ISMA headquarters; and

Whereas, Said physicians are willing to comply with the responsibilities of a Specialty Section as set forth in the ISMA Bylaws; therefore be it

RESOLVED, That a new ISMA specialty section entitled "Physical Medicine and Rehabilitation" be established.

RESOLUTION 87-29 PHYSICIAN RECOVERY CO-ORDINATOR POSITION

Introduced by: Marion County Medical Society

Referred to: Reference Committee 5

ACTION: Referred to the Board of Trustees

Whereas, The body of medicine is jeopardized by the untreated illness and infirmities of those individuals who make up that body of medicine; and

Whereas, Our Hippocratic Oath requires us to treat our colleagues; and

Whereas, The Indiana State Medical Association has recognized that the treatment of impaired physicians is consistent with its role of service to the profession of medicine and the public; and

Whereas, The orderly administration of recovery programs requires substantial administrative oversight and support; and

Whereas, These administrative functions can best be filled by an individual who is neither directly involved in the therapeutic process nor incumbered by the time constraints of volunteerism; therefore be it

RESOLVED, That the Indiana State Medical Association affirm its support for recovering and recovered impaired physicians; and be it further

RESOLVED, That the Indiana State Medical Association establish the position of Physician Recovery Coordinator to assist hospital, county society, and ISMA Impaired Physician Committees in their timely service to colleagues and the citizens of Indiana. The person being hired should be a certified alcohol and drug counselor at the Master's Degree level.

Fiscal Note: \$50,000 (annual) including consultation fees, office equipment, and support services.

RESOLUTION 87-30 CANDIDATE SUPPORT

Introduced by: Seventh District Medical Society

Referred to: Reference Committee 6

ACTION: Adopted

Whereas, A primary purpose of participation in organized medicine is the representation of member physicians' views and attitudes within the forums which shape public policy; and

Whereas, The strength of Indiana physicians to express their views within the policy bodies of organized medicine is directly related to the ability of Indiana physicians to be elected and/or appointed to the commissions, committees and other advisory bodies which help formulate policy; and

Whereas, The support of candidates who seek to carry forward the views of Indiana physicians is entirely consistent with a primary objective of the Indiana State Medical Association; therefore be it

RESOLVED, That general budgets of the Indiana State Medical Association adequately reflect the expenses incurred and/or anticipated by the Association on behalf of Indiana physician candidates who seek American Medical Association elective and/or appointive positions, provided that such candidates have sought and received ISMA's endorsement for the position he/she seeks; and be it further

RESOLVED, That contributions not be sought from the membership at large as the sole or primary source for candidate support, recognizing that such funding is a direct obligation and responsibility of the Association through dues support.

Fiscal Note: \$5,000 per year.

RESOLUTION 87-31 NAME CHANGE FOR THE COMMISSION ON PHYSICIAN IMPAIRMENT

Introduced by: Marion County Medical Society

Referred to: Reference Committee 2

ACTION: Referred to Board of Trustees

Whereas, The title "Commission on Physician Impairment" may infer negative connotations toward physicians participating as members of the Commission and/or receiving assistance from the Commission; and

Whereas, Experience in other areas of the country has shown that physician participants might be labeled "impaired" and have such a label equated in-

Resolutions

appropriately with incompetence; and

Whereas, The intent of this Commission is to provide assistance to physicians who are recovering or have recovered from physical impairment; and

Whereas, The AMA and other experienced organizations have adopted the more positive and descriptive phrase of "Physician Assistance," therefore be it

RESOLVED, That the ISMA Commission on Physician Impairment be renamed "The Commission for Physician Assistance;" and be it further

RESOLVED, That the Bylaws of the Indiana State Medical Association and all other materials produced by the State Medical Association be amended to reflect this action.

RESOLUTION

COMMENDATION FOR SHIRLEY THOMPSON KHALOUF, M.D.

Introduced by:

Grant County Medical Society

ACTION:

Adopted by Acclamation

Whereas, Dr. Shirley Thompson Khalouf has served organized medicine at both the county and district levels, including serving as president of each; and

Whereas, She has served in this House as a delegate and as its vice speaker and speaker; and

Whereas, She has served ISMA as president-elect and is now completing a most successful year as our president; therefore be it

RESOLVED, That this House extends its appreciation and thanks to Shirley Thompson Khalouf, M.D., for her long and gracious service to the Indiana State Medical Association, and that we support her wholeheartedly in any further goals she may have on the behalf of organized medicine.



New members of the ISMA Fifty Year Club. (A complete listing appeared in the October 1987 issue, page 971.)

TAKE CONTROL OF DIABETES

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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Polymyalgia Rheumatica . . . CONTINUED FROM PAGES 11-16

1. A 72-year-old woman presents with scalp pain, amaurosis fugax, malaise and jaw claudication. Her Westergren Erythrocyte Sedimentation Rate (WESR) is 112mm/hr. Your first intervention would be:
 - a) obtain a temporal artery biopsy
 - b) prescribe prednisone, 6 mg daily
 - c) prescribe aspirin 12 tablets daily
 - d) perform a cranial angiogram
2. Routine work-up of a patient you strongly suspect of having PMR includes:
 - a) muscle biopsy
 - b) Electromyography
 - c) temporal artery biopsy
 - d) none of the above
3. The differential diagnosis of PMR includes:
 - a) cancer
 - b) hypothyroidism
 - c) rheumatoid arthritis
 - d) all of the above
4. A 63-year-old woman presents with fatigue, 10-pound weight loss, joint pain and swelling, proximal muscle aching and two hours of morning stiffness. Examination reveals synovitis of the wrists, metacarpophalangeal joints and elbows. Lab tests reveal bone erosions of the MCP joints bilaterally, negative rheumatoid factor and WESR of 63 mm/hr. This presentation is most consistent with:
 - a) rheumatoid arthritis
 - b) polymyalgia rheumatica
 - c) rheumatoid arthritis and polymyalgia rheumatica
 - d) none of the above
5. An 80-year-old patient presents with the new onset of headaches for the past three weeks. Otherwise she is asymptomatic. Your first step should be:
 - a) temporal artery biopsy
 - b) prescribe prednisone 50 mg daily
 - c) obtain a WESR
 - d) none of the above
6. The utility of immediate high dose corticosteroid therapy in the patient you suspect has giant cell arteritis and who presents with monocular blindness is primarily to:
 - a) prevent bilateral blindness
 - b) reverse monocular blindness
 - c) prevent coronary angiitis
 - d) none of the above
7. In a patient with polymyalgia rheumatica, the feature most predictive of coexistent giant cell arteritis is:
 - a) jaw claudication
 - b) tender nodular scalp arteries
 - c) headache
 - d) a and b
8. Which of the following is important to consider in performing an arterial biopsy in a patient suspected of having giant cell arteritis:
 - a) removal of the entire artery
 - b) prednisone therapy administered before the biopsy is performed may reduce the yield of positive results
 - c) biopsy the most symptomatic scalp artery even if it is not the temporal artery
 - d) all of the above
9. Select the one false statement:
 - a) motor strength in polymyalgia rheumatica is frequently normal
 - b) some patients with giant cell arteritis require more than seven years of therapy
 - c) intracranial arteries are more often involved in giant cell arteritis than extracranial vessels
 - d) it is important to continually monitor a patient with polymyalgia rheumatica for development of giant cell arteritis
10. A 65-year-old man presents with pain and swelling of the right hand and forearm. You find diminished brachial and radial pulses and low blood

DECEMBER CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the December 1987 issue: "Hydrops Fetalis," by Wendy Fish, M.D., et al.

- | | |
|---------------|---------------|
| 1. a, b, c, d | 6. a, b, c, d |
| 2. b | 7. a |
| 3. b | 8. d |
| 4. a, e | 9. c |
| 5. d | 10. a |

CONTINUED ON PAGE 98

Answer sheet for Quiz: (Polymyalgia Rheumatica)

- | | |
|------------|-------------|
| 1. a b c d | 6. a b c d |
| 2. a b c d | 7. a b c d |
| 3. a b c d | 8. a b c d |
| 4. a b c d | 9. a b c d |
| 5. a b c d | 10. a b c d |

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Feb. 10, 1988 to the address appearing at the top of this page.

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.



AUXILIARY REPORT

Anne Throop, Indianapolis
ISMA Auxiliary President 1987-88

Legislation is one of the targeted areas of emphasis this 1987-88 auxiliary year. Our efforts have been geared toward encouraging our membership to be more interested, involved, and aware of health and medically related legislation. Today much of the health of Indiana's citizens, as well as the practices of Indiana's physicians, is affected by legislation. Now, more than ever, it's imperative that we who are "Advocates for Medicine" be aware of what's being legislated, both at the state and national levels. The time to be involved is *before* laws are passed, when our input will do the most good to educate our lawmakers so that sound, responsible legislation results.

One of our main goals this year has been to encourage county auxiliaries to form legislative study or legislative awareness groups. Ideally, these are small informal groups of interested auxiliarians meeting weekly or biweekly just before and during the Indiana Legislature's short session. Members discuss issues of interest to medicine in the 1988 session, learn how the legislature works and how to contact

legislators both by telephone and by letter. Several counties have plans for such groups.

The ISMA Department of Government Relations supplies information for the ISMA Auxiliary. While the legislature is in session, county auxiliary presidents and legislative chairmen will receive from ISMA a weekly computer printout detailing what bills are pending in the General Assembly, ISMA's position, and which legislators to contact. Other materials such as background information on proposed legislation, lists of lawmakers' addresses and phones, and committee assignments are also provided for auxiliaries.

The ISMA Auxiliary this year held three mini-confluences (training sessions) for county auxiliary leaders in three geographical areas. Legislative involvement was one of the areas covered in these programs. Legislative issues of interest anticipated in 1988 were discussed by legislative assistants from ISMA. A number of county auxiliaries have had or are planning to have meetings or programs

dealing with legislation.

Plans are well under way for January 28, ISMA Auxiliary's "Day at the Capital." All auxiliarians are invited to Indianapolis to visit the General Assembly in session, tour the capitol building, and have lunch with their legislators at Embassy Suites. The luncheon speaker will be Representative Vaneta Becker of Evansville. She is chairman of the Human Affairs Committee and also serves on the Public Health Committee. This will be an excellent opportunity for auxiliarians to get to know their area legislators on an informal basis, so important when contacting a lawmaker about a vote on a bill.

The ISMA Auxiliary supports the ISMA in its endeavors to obtain the best health care available for the citizens of Indiana and the best climate for the practice of medicine through the implementation of its legislative programs.—Cheryl Haslitt and Barbara McConnell, co-chairmen for Legislation, ISMA Auxiliary

INDIANA STATE MEDICAL ASSOCIATION AUXILIARY

Executive Committee

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CURRENT CONCEPTS IN CANCER TREATMENT: February 28-March 14, 1988. Carl G. Kardinal, M.D., co-director, Ochsner Cancer Institute. Primary topics and lecture titles: historical background, a conceptual history of cancer, and cancer quackery through the ages; cancer as

a potentially preventable disease, cancer control programs in the U.S., the year 2000 goals; breast cancer, approach to the newly diagnosed patient, approach to the patient with advanced disease; supportive care of the cancer patient, medical issues, psychosocial issues. For more information you may write to: 3194 Lawson Blvd., Ocean-side, New York 11572—516-536-7292.

LEUKEMIA: MOLECULAR ALTERATIONS AND CELLULAR PROLIFERATION, March 16-19, 1988, New Orleans, La. The Leukemia Society of America presents a two-and-a-half day course designed to provide information on current research on molecular alterations and cellular proliferation in the leukemias. Topics covered will include: signal transduction mechanisms in hematopoietic cell, oncogene activation in lymphoid cells, genetic alterations in hematopoietic malignancies, chemotherapeutic insult and cellular response, identification of minimal residual disease. This activity meets the criteria for 14.5 credit hours. Registration before March 8, 1988 is \$150. Mail to M. Louise Togli, Leukemia Society of America, 733 Third Ave., New York, N.Y. 10017.

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I.U. Researchers Charged with Finding Drugs to Treat Pneumocystis Pneumonia

Research scientists at the Indiana University Medical Center have been awarded a five-year contract of \$1.4 million from the National Institutes of Health to find new drugs to treat *Pneumocystis* pneumonia, the most common infection for which AIDS patients receive medical attention. This form of pneumonia affects 80 percent of all AIDS patients sometime during the course of their illness and is the most frequent cause of death in AIDS patients.

Renewing a previous three-year NIH/I.U. contract, this five-year contract is one of three awarded by NIH to U.S. groups involved in the search for new drugs to use against this currently difficult-to-treat microorganism.

"Drugs currently used against *Pneumocystis* pneumonia do not work well in AIDS patients," says Dr. James W. Smith, professor of pathology and director of the research project. "Although current drugs have been useful in non-AIDS patients, toxic reactions in two-thirds and poor response of the infection to the drugs in a number of AIDS patients has spurred the search for additional agents."

EPISTEMOLOGY

Commentary

When I was a pre-medical student at Indiana University, the taking of some humanities, rather than just filling up on sciences whenever possible, was recommended to us.

So I took a little philosophy, and during these classes the word "epistemology" or the study of knowledge or the philosophy of knowledge was mentioned in passing. But we never delved into it. And that was good.

Years later I realized that knowledge is a shifting thing. Old facts are replaced with new facts. Theories change. Names change. Values change. It would have been foolish to have spent a significant amount of time

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Five lines at the top of each leaflet can be programmed to allow for a per-

studying the philosophy of knowledge as a college student.

Probably the best form of epistemology is found in Plato's *Dialogues*. I sneaked enough time to read three or four of them when I was a medical student. They were charming. Recently, I read another to see if they were still as I remembered. They are.

They show, in little dramas, with Socrates questioning one or more Athenians, the pursuit of truth. It is the search for knowledge, the quest, that is so admirable, and gives meaning to "the study of knowledge." It is not the mere gathering of facts, names, and ideas, but the striving for, that counts.

"Cheers" to Socrates, Plato, Jowette (the translator), and Indiana University. —R.J. Noveroske, M.D., Newburgh

sonalized message (e.g., pharmacy name, address, telephone number). In addition, the capability exists for adding the name of the patient, the prescription number, and patient-specific dosing instructions.

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New I.U. Institute to Study Women's Health Issues

Special studies at the I.U. Medical Center have revealed many differences—medically, physiologically, emotionally, and in relation to length of life—between men and women.

Such differences inspired the creation of the Institute of Women's Health at the Center to promote further study nationwide. Dr. Diane Brashear, assistant professor of obstetrics and gynecology, is executive director of the Institute, which conducted the first national conference on the subject Nov. 4. Participants included authorities in psychiatry, nursing, OB/GYN, sociology and public health.

CME Quiz . . .

CONTINUED FROM PAGE 83

pressure in the right arm, with cyanosis and coolness of the right arm and hand. There is a bruit in the right supraclavicular fossa, but no heart murmur. The left upper extremity and cranial vessels are normal. He denies cranial symptoms. An appropriate evaluation would include all of the following *except*:

- a) Westergren erythrocyte sedimentation rate
- b) temporal artery biopsy
- c) angiogram
- d) echocardiogram

For the Asking

• Clinicians should use special care in billing Medicare, Blue Shield and other third parties, according to the "Physician's Advisory" of November 1987. Special procedure coding such as CPT-4, HCPCS or ICD9CM contain many subcodes for items that appear occasionally; when such procedures do occur, it is important to bill for them under the subcodes. Each issue of "Physician's Advisory" costs \$15. The annual subscription rate is \$120. Address: MCA Publications, P.O. Box 126, Bala Cynwyd, Pa. 19004.

• Project USA is an AMA program to recruit fully licensed physicians for short-term, general medicine assignments at Indian Health Service and National Health Service Corps hospitals and clinics. Vacancies are from two to four weeks and occur in a variety of interesting locations. Participating physicians receive a stipend of \$750 per week plus round-trip transportation and living accommodations. For information, contact John Naughton, Project Director, AMA, 535 N. Dearborn, Chicago 60610—(312) 645-4702.

• "Foster Parenting Abused Children," second edition, has been published by the National Committee for Prevention of Child Abuse. It is written by Dr. Eliana Gil, a well-known writer and accomplished counselor on child abuse. The booklet sells for \$4,

plus 50¢ for shipping and handling. For information, call the Committee's Sales Department at (312) 663-3520, or write them c/o P.O. Box 94283, Chicago 60690.

• Cochlear implants will be discussed during a National Institutes of Health Consensus Conference to be conducted May 2-4 at the Masur Auditorium, Bethesda, Md. Inquiries may be directed to Michael J. Bernstein, Office of Medical Applications of Research, Bldg. 1, Rm. 216, NIH, Bethesda, Md. 20892.

• Applications for Juvenile Diabetes Foundation grants in Diabetes Research for the funding year September 1988 to Aug. 31, 1989, must be received no later than March 1. A two-page abstract of the proposal must be received by Feb. 15. Contact: Grant Administrator, Juvenile Diabetes Foundation, 432 Park Ave. South, New York, N.Y. 10016—(212) 889-7575.

Costs of Litigation, Insurance Restrict Product Innovation

A critical problem facing American society and industry is escalating product liability costs. These expenses, including insurance premiums and litigation, frequently prevent manufacturers from marketing products that do more good than harm and are superior to those on the market.

As a result, says an article in the October issue of Insurance Review, published by the Insurance Information Institute, some manufacturers have chosen to abandon valuable new technologies, life-saving drugs or innovative product design.

AZT-AIDS Update

The clinical use of AZT in treatment of AIDS is no longer dependent on former approval of each case by Burroughs Wellcome. However, the same criteria are applicable. These are "symptomatic HIV infections (AIDS and advanced ARC)" with either a history of confirmed pneumocystis carinii pneumonia or a lymphocyte count of less than 200/mm³.

New Drug Delivery Method Found Useful in Fighting AIDS-Related Eye Disease

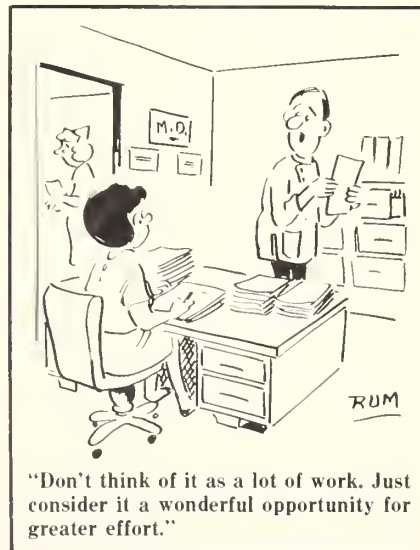
A new drug delivery method has proven effective in treating a blinding eye disease associated with AIDS, according to eye researchers.

The American Academy of Ophthalmology reports that ophthalmologist Fred M. Ussery III, M.D., and his colleagues injected an antiviral drug, ganciclovir, directly into the eyes of 11 AIDS patients to treat CMV (cytomegalovirus) retinitis, a relentless, progressive eye infection that affects about one-third of AIDS patients.

Anti-Ulcer Drug Marketed

Japan Upjohn Limited has begun co-marketing Alloca (ornoprostil), the first prostaglandin drug approved in Japan for the treatment of gastric ulcer.

The ability of certain prostaglandins to protect cells in the stomach membrane—the function known as cytoprotection—was discovered by Andre Robert, Ph.D., of Upjohn in 1976. Prostaglandins are a group of naturally occurring fatty acids that stimulate contraction of the uterine and other smooth muscle and have the ability to lower blood pressure, regulate acid secretion of the stomach and control inflammation.



NEWS NOTES

Here and There ...

Dr. Leo Watson, a Kokomo ophthalmologist, has been named to the Indiana Society to Prevent Blindness board of directors.

Dr. Ralph Stewart of Vincennes, president of the Indiana Academy of Ophthalmology and a diplomate of the American Academy of Ophthalmology, represented Indiana at the recent American Academy of Ophthalmology meeting in Dallas, Texas.

Dr. Donald Dian of Bluffton was the keynote speaker at a November seminar for parents on sexuality education at DeKalb Middle School. Dr. Dian is a psychiatrist who specializes in adolescent medicine. During the seminar he also addressed physical and emotional medical problems experienced by preteens and teenagers.

Dr. Rose Fife, an Indianapolis rheumatologist, presented a program on arthritis and research to the Indianapolis Arthritis Club in November.

Dr. Samuel Wentworth, Danville, was awarded ISMA's 1987 Physician Community Service Award during the recent ISMA convention. (Related story on page 67.)

Dr. James Johnson of Greencastle recently received the Putnam County Mental Health Association Person of the Year Award for 1987. The award is presented annually to an individual who has made a significant contribution to programs of the association.

Dr. William Beeson of Indianapolis has been elected to the executive council of the Indiana University Alumni Association. Dr. Beeson is the current Marion County Medical Society president and also was recently elected vice speaker of the ISMA House of Delegates.

Dr. Stephen D. Tharp of Frankfort has been named the new county health officer by the Clinton County Board of Health. Dr. Tharp, the current assistant health officer, succeeds Dr. Milton W. Erdel.

Dr. Frank Beardsley of Frankfort was reappointed to another four-year term on the Clinton County Board of Health.

Dr. Robert M. Pearce, an Indianapolis psychiatrist, presented a program on "Psychiatric Hospitalization of Adolescents" to physicians in Valparaiso in October. Pearce, director of child and adolescent services at

Gallahue Mental Health Center, discussed assessment of depression and anxiety in adolescents, evaluation of suicidal risk, and determining inpatient and outpatient treatment.

Dr. Charles Salisbury was recently elected president of the board of trustees of Terre Haute Regional Hospital. Dr. Gordon McLaughlin is vice president, and Drs. Roberto Cantillo and Robert Taube were elected to three-year terms on the board.

Dr. Ray C. Smith Jr. of Indianapolis has been awarded the American Cancer Society's National Divisional Award for outstanding contributions to the Society's service, education and research programs.

Dr. Gloria Ho of Terre Haute was recently elected to fellowship in the American Academy of Pediatrics.

Dr. Charles R. Kershner, a Marion orthopedic surgeon, was named "Doctor of the Year" by the Mississinewa Valley Medical Assistants at their annual banquet in October.

Dr. James Buchanan of Auburn presented an overview of asthma, medications and treatment during a November "family asthma education program" for children with asthma and

Physician Recognition Awards



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



Arshad, Mahjabin K., Merrillville
Babcock, George K., Bluffton
Balter, Eugene L., Gary
Bloss, Bryant A., Evansville
Brown, Michael R., Terre Haute
Carmody, Raymond F., Merrillville
Dolan, Patrick A., Indianapolis
Ferrara, Thomas A., Indianapolis
Ferree, Mary M., Indianapolis
Frieske, David A., Valparaiso
Gartner, Joseph C., Jasper
Gaud, Ramesh S., Rensselaer
Goldenberg, Mitchell E., Munster
Harris, Garnet R., Danville

Healey, Robert J., Indianapolis
Hull, James E., Lafayette
Kashlan, M.B., Terre Haute
Kelsey, Robert M., LaPorte
Leon, Mario, Jasper
Lindgren, Ivan T., Aurora
Logie, Keith W., Indianapolis
Mann, Richard E., Fort Wayne
Manning, George C., Fort Wayne
Marienau, David J., Evansville
McCormick, Charles O., III, Greenwood
McDonald, Eugene W., Michigan City
Melin, Christopher, Anderson
O'Yek, Victorio K., Schererville

Pennington, Robert E., Jr., Richmond
Premuda, Franklin F., Hammond
Qazi, Haroon M., Indianapolis
Rougraff, Maurice E., Indianapolis
Rust, Robert J., Granger
Sauer, John B., Indianapolis
Sellers, Francis M., South Bend
Serrano, Jose F., Hammond
Slabaugh, Robert D., South Bend
South, Dale R., Jr., Elkhart
Stevens, Robert M., Evansville
Tubergen, Laverne B., Indianapolis
Van de Leuv, John H., Carmel
Weiss, Robert M., New Albany

their parents at DeKalb Memorial Hospital.

Dr. Rod Kubley of Plymouth, Dr. Robert J. Helm of Elwood, Dr. Joanne Martin of Brookville, and Drs. Larry Ratts and J. Nathan Sherlock, both of Bloomington, were recently named diplomates of the American Board of Family Practice.

Dr. Fred Butler, an Indianapolis oncologist, was guest speaker during the American Cancer Society's cancer forum at St. John's Medical Center in Anderson in November. Dr. Butler, director of clinical oncology trials at Methodist Hospital in Indianapolis, discussed malignant lymphoma.

Dr. Wayne White of Connersville has been appointed by the Fayette County Commissioners to serve as county health officer until Jan. 1, 1991.

Dr. Mark Wisen, a Bloomington neurologist, presented a program in Bedford entitled "Epilepsy and Its Treatment" to commemorate Epilepsy Awareness Month in October.

Dr. Henry Covelli, an Anderson pulmonary disease specialist, participated in the third in a series of six HealthStyles programs being offered by Saint John's Health Care Corporation by presenting a discussion of pneumonia's symptoms, risks and treatments.

Dr. Del Nelson, a neurologist at the Caylor-Nickel Clinic in Bluffton, spoke in November to the members of the Berne Rotary about strokes and their causes.

Dr. John Hinton, a family practitioner from College Corner, has been elected chairman of the Prescription Abuse Study Committee. The committee was established by the Indiana General Assembly to study the entire prescription drug abuse problem in Indiana and make recommendations for legislative solutions.

Dr. John Haste of Agros, president of the Marshall County Chapter of the American Diabetes Association, was the group's featured speaker at its meeting in October. Dr. Haste gave a general lecture on diabetes with a question-and-answer period afterward.

Dr. Frank Swaim, a Rockville family practitioner, led an October Vermillion

County Hospital seminar on the causes, treatment, and prevention of osteoporosis.

Dr. Thomas Vidic, an Elkhart neurologist, spoke to the Goshen Community Alzheimer's Family Support Group in November.

Dr. Tony Yeiter, a pathologist in Crawfordsville, presented the program "AIDS . . . An Overview of the Disease and a Discussion of the Medical Issue" at a November Evening of Health at Culver Union Hospital.

Dr. Lemoyne Pringle of Danville addressed "What to Watch for as an Ostomate" during the November Hendricks County Hospital Ostomy Support Group meeting.

Dr. Michael Aronoff, a Bloomington general practitioner, was the featured speaker at the Health Association of Monroe County annual meeting in October.

Dr. Michael Schatzlein, a Fort Wayne cardiovascular surgeon, conducted a public presentation on heart transplantation in November at the Greencroft Senior Center in Goshen.

Dr. Robert Richey Jr., a Bloomington obstetrician, presented a public program on "Menopause and Beyond" in October at Wegmiller Auditorium in Bloomington Hospital.

Dr. Richard Miyamoto of Indianapolis was the invited guest speaker for the International Cochlear Implant Symposium in Duren, West Germany, in September, and the International Symposium on Audiological Medicine in Puerto De La Cruz, Tenerife, Canary Islands, Spain in November. He discussed issues related to cochlear implantation in deaf children.

Dr. Philip M. Coons, an Indianapolis psychiatrist, was selected president-elect of the International Society for the Study of Multiple Personality and Dissociation at its annual meeting in November. Dr. Coons was inducted as a fellow of the society and was awarded the Morton Prince Award for excel-

lence in research. Dr. Coons has recently been named to the editorial board of the journal *Dissociation*.

Dr. Arthur B. Richter, an Indianapolis cardiovascular disease specialist, was awarded the Laureate Award from the American College of Physicians, Indiana Chapter, at its annual dinner in November. Dr. Richter has been chairman of the St. Vincent Osler Club since its organization in 1974 and is a consulting member of the medical staff of St. Vincent Hospital and Health Care Center.

Dr. Frank L. Emert Jr., a Vincennes ophthalmologist, was the featured speaker at an October seminar in Lawrenceville, Illinois, on cataracts and surgery.

Dr. Lynn Eiler, a Lawrenceburg internist, was the guest speaker at the October Dearborn County Hospital Heartbeats meeting.

Dr. M.B. Domingo, a radiation oncologist, and Dr. Krishna Murthy, an internist, both of Princeton, were part of an October Gibson General Hospital public forum panel entitled "Living With Cancer."

Dr. Randolph W. Lievertz, an Indianapolis family practitioner, lectured to the Tippecanoe County Medical Society on "Management and Treatment of Lower Respiratory Infections" in November. Dr. Lievertz also presented a Grand Grounds to the medical staffs of the Saginaw Cooperative Hospitals on "Estrogen Replacement Therapy in Menopause" and spoke on osteoporosis to the Western Michigan Osteopathic Association in Muskegon, Michigan.

Drs. James Pickerel, Lance Pickerell, Jeffrey Jungers and Richard Wangelin, Terre Haute ophthalmologists, presented the program, "Cataract and Laser Eye Surgery" in October as part of Union Hospital's community health series.

Dr. Hans R. Wilbrandt, an Indianapolis ophthalmologist, recently addressed the Fifth European Implant Lens Council In Jerusalem on new methods of endocapsular phacoemulsification. He also recently presented a course on the same subject at the University of Utah.

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

NEWS NOTES

New ISMA Members

J. Timothy Ames, M.D., Valparaiso, family practice.

Seetharamaiah Atluri, M.D., Fort Wayne, anesthesiology.

M. Edwina Barnett, M.D., Lafayette, nephrology.

Thomas M. Browne, M.D., Knox, family practice.

Tai-Min Chen, M.D., Fort Wayne, pediatrics.

Tae S. Chung, M.D., Terre Haute, therapeutic radiology.

Jac A. Cooper, M.D., Valparaiso, general surgery.

Monte L. Cordray, M.D., Terre Haute, urological surgery.

Patrick J. Daley, M.D., Fort Wayne, cardiovascular diseases.

Marilyn J. Dargis, M.D., Valparaiso, emergency medicine.

Marcia Favali, M.D., Terre Haute, family practice.

Randy L. Gehring, M.D., Lafayette, neurological surgery.

John T. Geneczko Jr., M.D., Lafayette, gastroenterology.

Cary L. Hanni, M.D., Evansville, vascular surgery.

Charlotte J. Harris, M.D., Lawrenceburg, orthopedic surgery.

Matthew Heller, M.D., Leo, family

practice.

Jerry M. Jesseph, M.D., Bloomington, general surgery.

Ritu M. Kalwani, M.D., Lafayette, internal medicine.

Ava A. Kaufman, M.D., Fort Wayne, internal medicine.

Mark A. King, D.O., Fort Wayne, family practice.

Lee A. Klopfenstein, M.D., Fort Wayne, family practice.

Sylvia A. Manalis, M.D., Fort Wayne, child psychiatry.

Gregg R. Mattison, M.D., Fort Wayne, diagnostic radiology.

Edwin L. McEowen, M.D., Fort Wayne, emergency medicine.

Mitchell D. Meyer, M.D., Kokomo, family practice.

Leon Nazarian, M.D., Muncie, diagnostic radiology.

Curtis L. Niermann, M.D., Fort Wayne, family practice.

Guillermo Obando, M.D., Bedford, diagnostic radiology.

Kundanbala B. Patel, M.D., Fairmount, internal medicine.

M. Hytham Rifai, M.D., Merrillville, neurological surgery.

Carl R. Roberts, M.D., Kokomo, pediatrics.

William M. Rutledge, M.D., Fort Wayne, orthopedic surgery.

Larry G. Schachter, M.D., Anderson, occupational medicine.

Martin Schmidt Jr., M.D., Terre Haute, gastroenterology.

Daniel J. Simmonds, M.D., Fort Wayne, family practice.

Bryan M. Solmos, M.D., Valparaiso, general surgery.

Andy J. Stafford, M.D., Bloomington, obstetrics and gynecology.

Lillian G. Trexler, M.D., Bloomington, psychiatry.

Gregory W. Veerkamp, M.D., Fort Wayne, pediatrics.

Anna L. Welch, M.D., Lafayette, family practice.

Keith R. Whitesides, M.D., Lafayette, family practice.

John F. Wilson, M.D., Fort Wayne, family practice.

William W. Wilson, M.D., Fort Wayne, cardiovascular diseases.

John W. Woodall, M.D., Anderson, family practice.

Lawrence F. Wuest, M.D., Fort Wayne, family practice.

Residents:

David B. Greer, M.D., Evansville, family practice.

Brian A. Johnson, M.D., Muncie, family practice.



The Importance of Recognition

By Arthur R. Pell, Ph.D.

Consultant, Dale Carnegie & Associates, Inc.

In his exit interview after quitting his job with the Building Maintenance Corporation, Woody Harding was asked what he liked and disliked about the company. Woody responded that, although the salary and benefits were good, he never felt part of the company. "I always felt that I was nothing more than a cog in a machine," he said. "I worked in my department for nine months and I don't think my boss ever called me by name. He called all the guys 'Mac'."

Lisa Lang told a similar story. When she complained to her boss that she resented being called "dear" or "honey," her boss told her that she should be flattered because it showed he liked her. She pointed out that he called all the women by similar endearments and he responded, "With the high turnover we have in this department, I can't take the trouble to learn all your names." Not only is using such terms demeaning, this practice has been interpreted by some judges as evidence of sexual harassment.

Every human being craves recognition. Nobody wants to be considered just part of a mass of workers. Each person has a given name and, by using that name in addressing him or her, the supervisor takes the first step in recognizing the individuality of that person. Dale Carnegie said: "Remember that a person's name is to that person the sweetest and most important sound in any language."

Learn About Their Lives

Each one of our people has a life outside the job that is usually more important to that person than the job itself. By talking to our employees about the things that really interest them outside the job, we let them know we are interested in them as people -- not just workers.

One night when Gary was watching the local news on his TV, he was startled to see one of his clerks, Nancy, being interviewed about her collection of American flags going back to colonial days. Nancy had worked for him for three years and he was not aware of this unusual hobby. He realized that he knew little about any of his people. Gary resolved to correct this. The next morning he congratulated Nancy on her interview and asked her questions about the collection. He then made a practice of using slow periods on the job to talk to each of his people. He learned a good deal about their interests, families and activities that he never knew. This enabled him to use talents they had that he was not aware of and to establish much greater rapport with each of them. Instead of considering all his people as "his department," he now looked upon them as individuals, each of whom related in his or her own way to the department and therefore could contribute differently but effectively to the department's goals.

Recognize Accomplishments

There are many ways companies recognize the accomplishments of their employees. In the lobbies of most hotels and in prominent places in many company offices, one can often find a plaque dedicated to the "employee of the month." Being named to this honor is a major event in the lives of the honorees. They

may be given some tangible award, but more important than the bonus or prize is the recognition that they have been given.

Mary Kaye, the cosmetics company, is known for its policy of giving recognition to those people on its staff who are achievers. In addition to awards and plaques, the award winners are leted at their conventions and publicized in the company in-house publication. Probably the most coveted award is the use of a pink Cadillac given to the highest achievers. How proudly the winners drive their cars, which provide not only status, but recognition by the company for a job well done. To keep the cars from year to year, the winners must continue to meet or exceed the high standards required.

Stew Leonard owns the largest single dairy store in the United States, located in Norwalk, Connecticut. During the pre-Thanksgiving rush, some of the office staff noticed that the long lines at the check-out counters were moving slowly. Without any prompting from management, several of these clerks left their regular work and went to the counters to help the cashiers bag the groceries and thus accelerate the movement of the lines.

When Stew became aware of this he resolved to do something special for these people. After the holiday, he purchased for each of them a beautifully knitted shirt with the inscription "Stew Leonard ABCD Award" embroidered on each shirt.

When asked what this inscription signified, the people were told, "Above and Beyond the Call of Duty."

By giving special recognition to people who gave more than required to their jobs, Stew not only "gave credit where credit was due," but let everybody -- the employees themselves, their co-workers and supervisors and the customers -- know that their work was appreciated. In doing this, he contributed to the continuing growth of the company's *esprit d'corps*.

Put It In Writing

At the A & G Merchandising Co., supervisors are provided with a packet of "Thank You" cards. These cards, which are available in any greeting card store, have the words "Thank You" printed in a beautiful script on the front and the rest is blank. Whenever an employee does something worthy of special recognition, the supervisor writes a note on one of these cards specifying what the special accomplishment was and congratulating the employee for achieving it. Most recipients show them to their friends and family and keep them forever.

No matter what award you may give to an employee -- be it cash or merchandise, it is worth spending a few more dollars and including a certificate or plaque. These mementos will be hung and serve as a permanent reminder that you recognized their accomplishments.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

1987 PHYSICIAN'S GUIDE TO INDIANA LAW

A reference guide is available for professionals who work with medically-related issues.

This informative guide highlights many aspects of Indiana law which relate to medical practice, including the following subjects:

- anatomical gifts
- birth certificates
- confidential patient information
- consent to treat
- expert witness
- generic drug substitution
- good samaritan law
- grounds for discipline
- malpractice
- peer review
- reporting requirements

The Physician's Guide to Indiana Law is available at no charge to ISMA members.

The Physician's Guide to Indiana Law is available to non-ISMA members for \$5.00 per copy.

Send your check to:
Indiana State Medical Association
Attn: Ron Dyer
3935 N. Meridian St.
Indianapolis, IN 46208



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 - 11—Laurence K. Musselman, Marion (1989)
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Robert M. Seibel, Nashville (1988)
 Edward L. Langston, Flora (1988)
 George T. Lukemeyer, Indianapolis (1988)
 Herbert C. Khalouf, Marion (1989)
 Martin J. O'Neill, Valparaiso (1989)
 Richard L. Reedy, Yorktown (1989)

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- 1—Pres: Syed A. Ali, Boonville
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 Annual Meeting:
- 4—Pres: Ricardo C. Domingo, Greensburg
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- 9—Pres: Dallas E. Coate, Lebanon
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- 10—Pres: Surjit S. Patheja, Valparaiso
 Secy: Barron M. Palmer, Hammond
 Annual Meeting: Sept. 28, 1988
- 11—Pres: Brian L. Doggett, Delphi
 Secy: Fred C. Poehler, LaFontaine
 Annual Meeting: Sept. 20, 1988
- 12—Pres: Thomas D. Smith III, New Haven
 Secy: William J. Aeschliman, Fort Wayne
 Annual Meeting: Sept. 15, 1988, Fort Wayne
- 13—Pres: Jon B. Kubley, Plymouth
 Secy: Thomas J. Eberts, South Bend
 Annual Meeting: Sept. 13, 1988

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OBITUARIES

Ralph E. Blackford, M.D.

Dr. Blackford, 94, a retired Indianapolis physician, died Sept. 22 at a local retirement home.

He was a 1934 graduate of Indiana University School of Medicine. He retired in 1984.

Dr. Blackford was a fellow in surgery at the Mayo Clinic from 1941-44. He was a member of the International and American Colleges of Surgeons. He also was a member of the ISMA Fifty Year Club.

William R. Clark, M.D.

Dr. Clark, 85, a retired Fort Wayne physician and surgeon, died Nov. 17 at St. Joseph Medical Center.

He was a 1926 graduate of Indiana University School of Medicine and was an Army veteran of World War II.

Dr. Clark was a past president of the Allen County Medical Society and a former ISMA trustee. He was a former president of St. Joseph Medical Center's medical staff; he also was a charter member and former president of the Fort Wayne Academy of Medicine and Surgery. He was a fellow of the American Academy of Family Physicians and a member of the ISMA Fifty Year Club.

William W. Kriebble, M.D.

Dr. Kriebble, 70, a retired Terre Haute physician, died Sept. 15 at his home.

He was a 1941 graduate of Indiana University School of Medicine. He won two Silver Stars as an Army medical officer during World War II.

Dr. Kriebble, who retired in 1985, had practiced internal medicine in Terre Haute 40 years. He was a fellow of the American College of Chest Physicians and was a member of the American Thoracic Society and the Terre Haute Academy of Medicine.

Roger R. Reed, M.D.

Dr. Reed, 76, a retired Anderson orthopedic surgeon, died Sept. 27 at his home.

He was a 1938 graduate of Indiana University School of Medicine and an Army veteran of World War II.

Dr. Reed was a past president of the Madison County Medical Society. He also was a past chief of surgery and president of Community Hospital in Anderson. He was a member of the American and International Colleges of Surgeons and the International Academy of Proctology.

John E. Heubi, M.D.

Dr. Heubi, 70, a retired Indianapolis pediatrician, died Nov. 30 at his home.

He was a 1941 graduate of Indiana University School of Medicine.

Dr. Heubi was clinical director of pediatrics at Wishard Memorial Hospital from 1968 to 1982, and was professor emeritus of pediatrics at the I.U. School of Medicine.

Richard T. Nolin, M.D.

Dr. Nolin, 57, a Carmel physician, died Nov. 18 at Community Hospital, Indianapolis.

He was a 1955 graduate of Indiana University School of Medicine.

Dr. Nolin, who practiced in Carmel 32 years, was a fellow of the American Academy of Family Physicians.

William E. VanFleit, M.D.

Dr. VanFleit, 65, a South Bend thoracic and cardiovascular surgeon, died Sept. 21 at St. Joseph Medical Center, South Bend.

He was a 1945 graduate of Indiana University School of Medicine. He served in the Navy from 1946 to 1948.

Dr. VanFleit, credited with performing Indiana's first open heart surgery, was certified by the American Boards of Surgery and Thoracic Surgery. His many affiliations included the American College of Surgeons, the American College of Cardiology and the American Association for Thoracic Surgery.

C. David Salas, M.D.

Dr. Salas, 42, a New Castle-Muncie ophthalmologist, was killed Nov. 14 in a plane crash at St. Mary's, Pa.

He received the M.D. degree in 1970 from Arequipa University, Peru, South America.

Dr. Salas was a member of the World Eye Foundation advisory board, the American Implant and Refractive Surgery Society, and the American Association of Ophthalmology. He was Board-certified.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of INDIANA MEDICINE.

Contributions made to the Foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for Federal estate and gift tax purposes.

The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

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Dr. Downer, 73, a retired Evansville family physician, died Oct. 4 at his home.

Dr. Downer practiced in Evansville 22 years. He was on the staff at Welborn Baptist Hospital, St. Mary's Medical Center and Evansville State Hospital. He was a member of the American Academy of Family Physicians.

Dr. Suzuki, 76, a Covington general practitioner, died March 15, 1987 at his home.

He received the M.D. degree in 1940 from the University of Southern California.

Dr. Suzuki was a member of the American Academy of Family Physicians and the American Geriatrics Society.

Dr. Willis, 80, an Evansville general practitioner, died Sept. 16 at Deaconess Hospital.

He was a 1930 graduate of Indiana University School of Medicine and was an Army veteran of World War II.

Dr. Willis was an emeritus staff member and former medical staff president at Deaconess Hospital. He was a member of the ISMA Fifty Year Club

Dr. Lockhart, 67, a Connersville family physician, died Oct. 3 at his home.

He was a 1942 graduate of Indiana University School of Medicine and was an Army veteran of World War II.

Dr. Lockhart, who served as Fayette County health officer the last 20 years, was a diplomate of the American Board of Family Practice and was a member of the American Academy of Family Physicians.

Dr. Ray, 56, medical director for RCA, Indianapolis, died Oct. 8.

He was a 1957 graduate of Indiana University School of Medicine.

Before joining RCA 19 years ago, Dr. Ray had practiced in Huntington and Warren. He was a former public health officer for Huntington County. He was a member of the Industrial Medical Association and the Central Indiana Society of Occupational Medicine.

Dr. Enderle, 49, a Terre Haute general surgeon, died Nov. 28 at Terre Haute Union Hospital.

He was a 1963 graduate of Indiana University School of Medicine.

Dr. Enderle began practicing in Terre Haute in 1972, shortly after completing a two-year tour of duty with the U.S. Navy. He was Board-certified and was a fellow of the American College of Surgeons.

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COMMERCIAL ANNOUNCEMENTS

DERMATOLOGIST, pediatrician, oncologist, pathologist, otorhinolaryngologist, psychiatrist, endocrinologist, orthopedist, general/family practitioner—Excellent opportunity for physicians in Los Angeles suburb to join 90-member multi-specialty medical group. Large fee-for-service and prepaid practice, no Medi-Cal. Excellent compensation program based on guarantee plus incentive, profit sharing and pension plan. Group provides health, dental, life and malpractice. Partnership in real estate and medical corporation available. Send CV to Ron McDaniel, Assistant Administrator, Mullikin Medical Center, 17821 S. Pioneer Blvd., Artesia, CA 90701.

SEEKING DIRECTOR for industrial medicine clinic and emergency department based in moderate volume hospital in northwestern Indiana. Attractive compensation and malpractice insurance provided. Benefit package available. Contact: Emergency Consultants, Inc., 2240 South Airport Road, Room 20, Traverse City, MI 49684; 1-800-253-1795 or in Michigan 1-800-632-3496.

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INDIANA—Prosperous residential community in northern Indiana is seeking a dermatologist. Twenty-three physician group looking to add a second dermatologist to a rapidly growing practice. Excellent academic affiliation with the University of Notre Dame located nearby. Contact: Jean Ecos, 250 Regency Ct., Waukesha, WI 53186; 414-785-6500 (collect).

INTERNIST seeks associate to join her busy practice located in small Indiana community near Big 10 university. Must be BE/BC. Offering guaranteed salary plus incentive, progressive 347-bed regional hospital in area, paid malpractice insurance and more. Send CV to: V.P. Professional Services, P.O. Box 1149, Bloomington, IN 47402.

INTERNIST: BC/BE to join a two-man practice with primary care, consultative, and in-hospital intensive care practice-Indianapolis metropolis. Will help set up practice and/or business partnership. Position available immediately. Reply Box 19616, Indianapolis, Indiana 46219.

POSITION WANTED—Noninvasive **CARDIOLOGIST** (B.C.)-**INTERNIST** (B.C.). Experienced, up to date, dynamic, wishes to relocate. Ohio and Indiana licensed. Desires association with one or more busy **INVASIVE CARDIOLOGISTS** who would like more time for procedures. Ready to provide meticulous inpatient care, outpatient follow-up, cardiology consultation, and comprehensive medical management of cardiac patients. Curriculum Vitae and related information provided to serious requests. Reply to Slavko Knezevic, M.D., 4773 South Raeburn Drive, Cincinnati, OH 45223.

ADDITIONAL INTERNIST needed for successful, growing group practice in north central Indiana, close to Chicago and Indianapolis. Excellent compensation and benefits package are being offered. For more information, call Robert A. Douglas, M.D., 1-800-327-1585.

OCCUPATIONAL MEDICINE RESIDENCY position (PGYII Year/Academic Year) available July 1988 at Methodist Hospital of Indiana, Inc. Minimum prerequisite PGYI year in Family Practice, Internal Medicine or Transitional Program. Please send CV to: Guy F. Perry, M.D., c/o M.D. Bridge, Wiley Hall 434, Methodist Hospital of Ind., Inc., 1701 N. Senate Blvd., P.O. Box 1367, Indianapolis, IN 46206.

INTERNAL MEDICINE (2)—8C or 8E to join an established 3-man Internal medicine Primary Care Group in SW Indiana. Progressive hospital in community. Salary, bonus, benefits with future equity potential. Work with innovative, progressive Practice Management Organization. Send vitae to President, HQ Physician Services Corp., 126 S. Franklin, South Bend, IN 46601.

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Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to clordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage. Withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline; symptoms [including convulsions] similar to those of barbiturate withdrawal for clordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady state concentrations of the tricyclic drugs. Concomitant use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring

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The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs: Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

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Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

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INDIANA MEDICINE

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USPS 284-440
ISSN 0746-8288

POSTMASTER: Send address changes to
Indiana State Medical Association, c/o
Membership Department, 3935 N Meri-
dian St., Indianapolis, Ind. 46208.

INDIANA MEDICINE is published
monthly by the Indiana State Medical
Association. Second-class postage paid
at Indianapolis, Ind.

Address correspondence relating to
editorial material, advertising or
subscriptions to: INDIANA MEDICINE,
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of issue. Instructions for authors avail-
able upon request.

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microfilm from University Microfilms In-
ternational, 300 N. Zeeb Rd., Ann Ar-
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ABOUT THE COVER

The new Lincoln Hotel and University Conference Center,
located on the IUPUI campus in Indianapolis, opened last
July. For a review of the facility itself, together with infor-
mation on ISMA's Mid-Year Leadership Conference, see
page 144.



A white line drawing of a stethoscope on a black background. The stethoscope's tubing forms a large, stylized letter 'S' that frames the word 'STETHOSCOPE' in large, bold, white capital letters. Below 'STETHOSCOPE', the words 'EXAMINING STATE & NATIONAL MEDICAL ISSUES' are written in a smaller, bold, white sans-serif font.

STETHOSCOPE

EXAMINING STATE & NATIONAL MEDICAL ISSUES

The Medicare sign-up period has been extended through March 31, 1988.

Doctors are not expected to hear from their Medicare carriers about the participating/non-participating sign-up until sometime in February.

The budget reconciliation process in the Congress, aside from trimming \$23 billion from the federal deficit, impacts on Medicare in several ways:

Agreements entered into during the new sign-up period will be effective from April 1, 1988 through Dec. 31, 1988.

No word on status of physicians who did not participate in 1987, but who executed an agreement before the end of the year.

Biggest change. MAAC limits will apply as charge limit for each service. Previously, if the average of all the physician's Medicare charges for a service did not exceed the MAAC, a physician could charge an amount higher than the MAAC.

Physicians may not bill patients for non-assigned lab services. Sanctions for failure to comply.

Four different levels of reimbursement increases will depend on the physician's participation status and the type of service. Participating physicians can expect a 3.6 percent increase for primary care services. Reimbursements for non-primary care services provided by participating physicians will increase by 1 percent.

FEB 16 1988

Non-participating physicians will receive a 3.1 percent increase for primary care services and a 0.5 percent increase for non-primary care services.

Stay tuned for further developments.

IN INDIANA...

Credit for early successes in the 30-day session of the Indiana General Assembly goes to ISMA members for their diligence in contacting their state legislators.

An attempt, through HB 1070, to alter the Medical review panel process in the Medical Malpractice Act faltered. The proposed change was deleted from the bill through an amendment proposed by Rep. Brian Bosma, R-Indianapolis, which passed by 73-25 in a floor vote.

Mandatory continuing medical education on AIDS for physicians will not be required for the time being. In its place, the State Board of Health has agreed to distribute information on AIDS to physicians twice a year. The provision for CME on AIDS was originally part of SB 9.

A 1986 ISMA House of Delegates resolution was the genesis for SB 235 which concerns a ban on the free distribution of tobacco products to minors. The bill passed out of the Senate Commerce Committee in early January.

Distribution or use of anabolic steroids to enhance athletic performance would be illegal if SB 415 becomes law. The bill came about as a result of a resolution passed by the 1986 House of Delegates.

MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis



ONE HUNDRED YEARS AGO, in 1888, Grover Cleveland was President. In the November election he ran against Indiana's Benjamin Harrison and lost. Cleveland led in the popular vote by a 90,000 majority. Indiana at that time was regarded as a Democratic state and, even though Harrison was a Hoosier, Cleveland should have carried the state.

He didn't. And the reason he didn't was not so much that Harrison was a Hoosier, but rather the loss was a result of political hanky-panky involving the Democratic Party in its management of the Indiana Hospital for the Insane (now Central State Hospital). Indiana's electoral vote was the determining factor in the election. The delicate balance of power shifted from the Democrats to the Republicans in 1888 as a result of what was occurring on the grounds of this benevolent institution.

The story began in 1883, at which time a bill was introduced by Senator Jason (Bozoo) Brown into the state's General Assembly for the regulation of the state's three benevolent institutions (the Asylum for the Deaf and Dumb, the Asylum for the Blind, and the Hospital for the Insane). This bill provided for a board of trustees for each institution, three members to each board, all to be elected by the General Assembly in joint session. Since the Democrats controlled both houses, the bill, which passed, turned the control of the institutions over to a group of politicians who proved to be unscrupulous beyond belief.

Among the rascals was Dr. Thomas H. Harrison, who was elected president of the three boards. The board of trustees of the Insane Hospital then elected Dr. William B. Fletcher to be the institution's superintendent and their puppet (they thought). Dr. Fletcher, a good guy in this scenario, turned out to be a blend of hero and martyr—with no strings attached.

It took several months for Fletcher to realize he was superintendent in



William B. Fletcher, M.D.

name only, and that very serious abuses were taking place in the hospital's business administration and in patient care, abuses that Fletcher was powerless to control. The trustees were using the hospital as a vast political machine to benefit themselves and their political associates. Fletcher's ultimate recourse was to take the problem to William D. Foulke, president of the Indiana Civil Service Reform Association. This aggressive organization, which had no legal authority to conduct an investigation, did its own study and took the case to the people by way of the newspapers.

Dr. Harrison, reacting to the accusations, wrote his own response: "... They say the management is partisan, to which charge we plead guilty. If there is a Republican in the employ of the hospital, the Board of Trustees does not know it. We know there are competent Democrats in the state who can perform the duties required and so long as they can be found we want no other. Upon that proposition we can have no compromise and we want our friends and not our enemies on guard. As long as this management continues, it will be strictly partisan... It is true that some of the hogs died of cholera but it is maliciously false to say that

an ounce of diseased meat was ever used on the tables, and the superintendent will testify under oath that the charge is wholly untrue...."

The reform group (with whom Dr. Fletcher was better able to assist by virtue of his continuing role as superintendent) responded promptly:

"It is not true that our charge is maliciously false when we say that diseased meat was used upon the tables. It is not true that the superintendent will testify under oath to the falsity of such charge. We challenge the production of such an affidavit ...

"You have not denied that additional places have been made for political workers. You have not denied that prominent politicians of your party, Messrs. Landers, Cooper, Sullivan and others, are prominent in furnishing supplies. You have not denied that Mr. Gapen, one of your co-trustees, has been regularly receiving his salary although he is managing a sawmill in Arkansas and was not present at more than one meeting between October 1885 and July 1886 ...

"You have not denied that wholesale discharges of employees are frequent ... You have not denied that, of over 600 hogs purchased, more than one-half died, and you cannot deny that killing for the table went on out of the dying drove.

"You have not denied that the very morning our committee was at the asylum, butter infested with maggots had been concealed in the sewer to avoid our inspection. You have not denied a single act of cruelty to the patients of the asylum ...

"You have not denied the dissatisfaction of Dr. Fletcher with the present system and his proposal to secure a higher degree of efficiency among the attendants by a regular system of training; nor have you anywhere claimed that such suggestions have been acted upon by you. All these things are admitted by your silence...."

CONTINUED ON PAGE 184

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WHAT'S NEW?

Eastman Kodak Company announces that the FDA has granted permission to Cellular Products, Inc. of Buffalo, N.Y., to begin clinical trials on the new combination test, announced in August, that simultaneously determines the presence of antibodies for HIV, which is the causative agent for AIDS, and HTLV-1, the agent associated with adult T-cell leukemia and other non-Hodgkin's lymphomas. The trials have been started and are expected to be completed in about two months. A total of about 10,000 people in a number of locations around the country will be involved.

Astro-Med offers a new 8-channel recorder for catheter-lab, operating room, and intensive care monitoring. It is designed to reduce costs while improving test analysis. It is designated as MT-8800 New Technology Recorder. It permits substantial savings in outlays for chart paper.

Abbott announces that its product, Clindamycin, is now available in the company's *ADD-Vantage* drug delivery system. The addition of clindamycin brings the number of drugs approved for use in *ADD-Vantage* to 33. This system enables hospitals to reduce drug waste often caused by cancelled or changed prescriptions and helps pharmacies conserve labor and reduce material costs.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Brentwood Instruments has a leasing program that allows the physician to obtain the services of a Compes Holter Monitoring System at a truly affordable rate even for the smallest physician's office. This life-saving product increases the quality and depth of patient care by aiding in the detection, treatment, and management of a number of cardiac conditions, including silent ischemia. Lease payments for the second through fifth years are graduated, permitting the doctor time to build his/her cardiac patient base while keeping profit levels realistic.

Touche Ross & Company announces the Touche Ross Video Tax Guide 1988. It features all new material prepared by the Big Eight accounting and consulting firm's tax partners. This year's edition contains up-to-date analysis of the tax reform law, a special section on dealing with an IRS audit, and tips for personal tax planning in this and coming years. The video runs 70 minutes, is on VHS/Beta and sells for \$29.95 (suggested retail price).

A new patient-controlled analgesia (PCA) device, the *LifeCare PCA PLUS* Infuser, was introduced by Abbott Laboratories at the annual conference of the American Society of Hospital Pharmacists. The PCA method, considered by the National Institutes of Health to be "one of the innovative ways that may provide effective individualized analgesia," controls patient pain within seconds. A patient simply presses a button, attached to a portable pump, and a narcotic is released through an intravenous line. A built-in security system prevents the possibility of over-dosage.

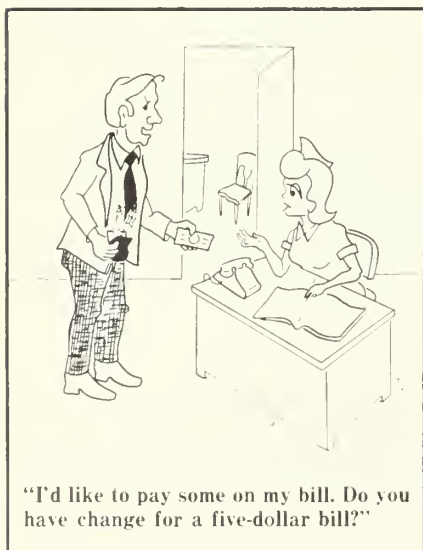
Colwell Systems offers a free Filing Information Kit to help professional practices create or maintain a comprehensive, well organized filing system. Colwell's color-coded systems virtually eliminate filing errors, purge inactive files, and identify patients quickly and easily.

The Notre Dame Lobund Laboratory has produced a cell-line that grows in a tissue culture and produces a high level of tissue plasminogen activator (TPA). Studies show that the resulting TPA dissolves blood clots from seven species of animals, including blood clots in humans. A method for producing the TPA in large quantities has been developed. A U.S. patent has been issued which covers production of the product. The method is the first non-recombinant method to be announced. It is undergoing clinical research for efficacy in a major blood coagulation center in England.

Houston Biomedical has a new Toposcopic Pathfinder, a catheter that greatly reduces vascular friction. Their new brochure describes, in detail, how the Topo, by utilizing the rolling eversion principle, can make multiple 90° turns without pushing or buckling. Catheter placement is facilitated for angiographic, gastrointestinal or urological diagnostic and therapeutic procedures.

Brentwood Instruments proposes to lease its 3-channel, computer-aided ECG for use in physicians' offices at an original rate for one year of \$99 per month. Subsequent annual rates are graduated to allow the physician to keep profit figures at realistic levels.

Connaught Laboratories announces receipt of FDA approval for marketing a ProHIBiT™, for immunization against Hib disease in children, 18 months of age and older. Previous vaccines against *Haemophilus influenzae* type B infections were effective only in children two years old and older. The new vaccine extends vaccination to nearly 50% more children at risk for Hib disease.





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FUTURE FILE

Hand Surgery Exam

The American Society for Surgery of the Hand announces its 1988 Self-Assessment Examination. The deadline for receipt of requests to participate is April 1.

The fee is \$70. Deadline for return of answer sheets is June 10. Category 1 credit for 20 hours will be awarded if the answers are returned on time. Twenty hours in Subcategory 5(d) will be assigned if the answer sheet is not returned; in this case, the Discussion Book will be sent to the examinee, who may compute his or her own score. Grades are reported by examinee numbers and not by name.

The address is 3025 S. Parker Road, Suite 65, Aurora, Colo. 80014.

Evansville Seminars

The MacKenzie Seminar on "Sound, Sex and Lasers" will be conducted beginning at 1 p.m., March 10, at St. Mary's Medical Center, 3700 Washington Ave., Evansville.

A geriatric seminar on "Invaders of Geriatric Life" will begin at 1 p.m., April 7.

The correspondent is W. Thomas Spain, M.D.—(812) 479-4468.

The Facial Skeleton

"Rigid Fixation of the Facial Skeleton" is the subject of a CME course to be conducted March 25-27 at the Walt Disney World Village, Lake Buena Vista, Fla., by the Northwestern University Dental School's Dept. of Oral and Maxillofacial Surgery.

The correspondent is Mary Appleton—(312) 908-5243.

Hypertension Control

The 8th Annual Great Lakes Conference on High Blood Pressure Control will be conducted April 18-20 at Weber's Inn, Ann Arbor, Mich.

For more information, contact: Hypertension Control Program, Michigan Dept. of Public Health, P.O. Box 30035, Lansing, Mich. 48909—(517) 335-8913.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Indiana University CME

Feb. 25: Dilemmas of Dementias, Evansville Center for Medical Education.

March 3: Hypertension: Diagnosis and Management, Reid Memorial Hospital, Richmond.

March 3-5: Surgical Laser Use: Basics and Specifics, Emerson Hall, I.U. School of Medicine.

March 10: Alzheimer's Disease: Challenges of Comprehensive Care, Marriott Hotel, Indianapolis.

March 11: Child Neurology Update, Lincoln Hotel, Indianapolis.

March 18: Management of the Severely-to-Profoundly Hearing Impaired Preschool and School Age Child, Lincoln Hotel, Indianapolis.

March 19-20: Annual Meeting, Indiana Society of Anesthesiologists and Anesthesia Update, Lincoln Hotel, Indianapolis.

March 23-24: Pediatric Pulmonology and Intensive Care, Lincoln Hotel, Indianapolis.

For further information on these and other CME programs, contact Melody Dian, Assistant Director, CME—(317) 274-8353.

Sports Medicine

The 11th Annual Sports Medicine Symposium will be conducted by the University of Wisconsin School of Medicine May 19-21 at the Concourse Hotel, Madison, Wis.

Physicians, nurses, therapists, and trainers are expected to attend. AMA Category 1 and AAFP credit will be granted.

The correspondent is Sarah Aslakson, 465B WARF Bldg., 610 Walnut St., Madison, Wis. 53705.

Methodist Hospital CME

March 4-6: 4th Annual Shock Wave Lithotripsy Symposium, Hyatt Regency, Indianapolis.

March 10-13: American Academy of Facial Plastic & Reconstructive Surgery Annual Seminar, Hilton Hotel, Indianapolis.

March 11: 20th Century Vascular Management for Primary Care (Peripheral Arterial Disease), Methodist Hospital Auditorium.

March 18-19: Advanced Trauma Life Support Course, Methodist Hospital Auditorium.

April 20: Sexual Dysfunction Seminar, Methodist Hospital Auditorium.

April 28 & 29: Advanced Cardiac Life Support Course, Methodist Hospital Wile Hall.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana—(317) 929-3733.

Primary Care

"Beyond Risk Identification: Intervention Strategies in Primary Care" is the title of a CME course to be held April 28-29 in Madison, Wis.

The course is designed for primary care physicians, nurses and physicians' assistants. AMA Category 1 and AAFP credit is arranged.

Write Sarah Aslakson, 465B WARF Bldg., 610 Walnut St., Madison, Wis. 53705.

Family Medicine Review

The 4th Annual Family Medicine Review is planned for April 13-17 at the Hyatt Regency, Austin, Tex.

The session, accredited for 40 hours, is sponsored by Scott & White, Temple, Tex., and by Texas A&M University College of Medicine. The fee is \$350, residents \$225.

For further information contact: Dept. of CME, Scott and White, 2401 S. 31st St., Temple, Tex. 76508—(817) 774-2350.

CONTINUED ON PAGE 156

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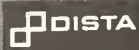
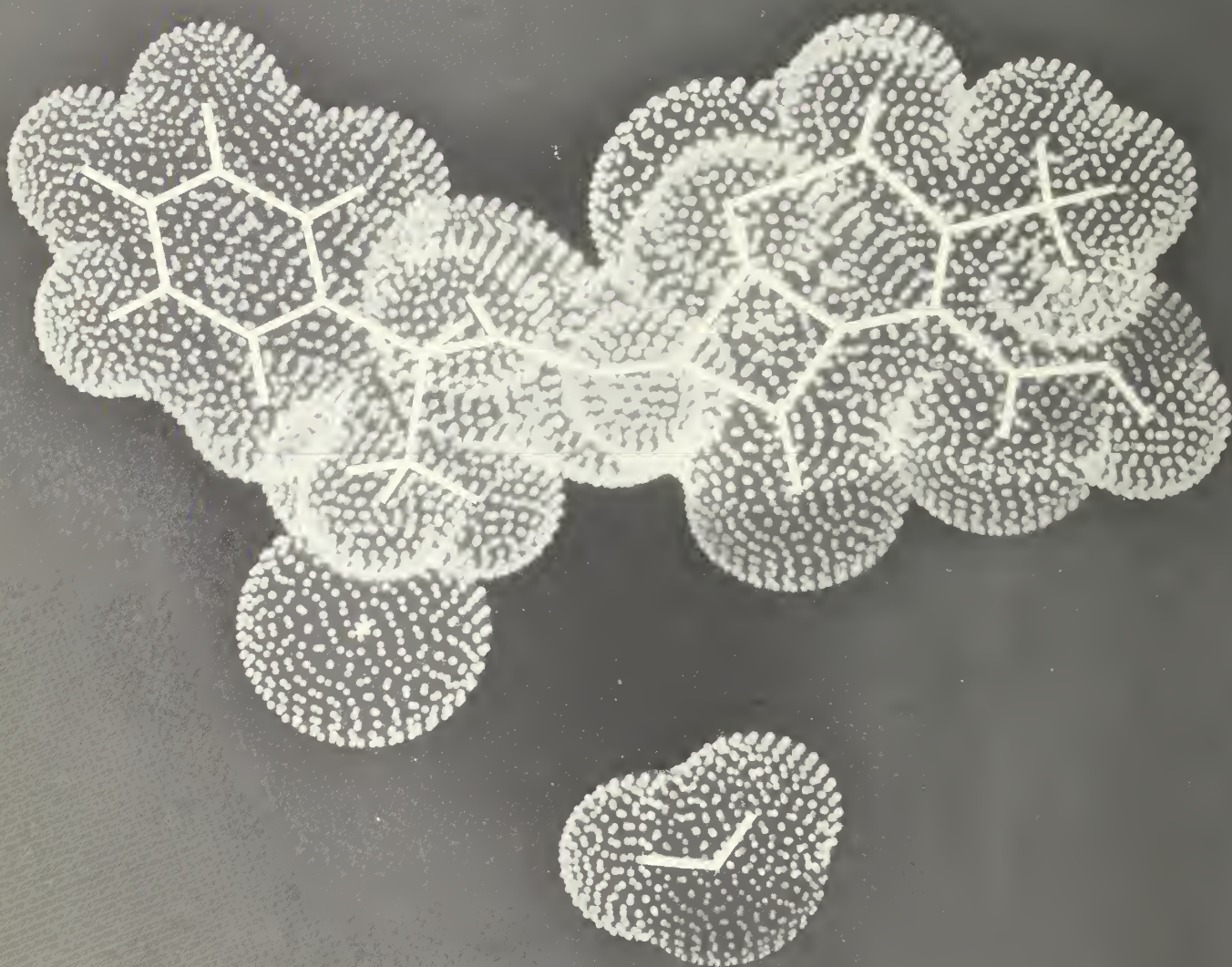
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Keftab is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-sensitive patients.

Penicillin is the drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever.

*Due to susceptible strains of *Staphylococcus aureus* and/or β -hemolytic streptococci.

†Due to susceptible strains of *Escherichia coli*, *Proteus mirabilis*, and *Klebsiella* sp.

‡Due to susceptible strains of group A β -hemolytic streptococci.

KEFTAB™

(cephalexin hydrochloride monohydrate)

Summary: Consult the package literature for prescribing information.

Indications and Usage:

Respiratory tract infections caused by susceptible strains of *Streptococcus pneumoniae* and group A β -hemolytic streptococci.

Skin and skin structure infections caused by susceptible strains of *Staphylococcus aureus* and/or β -hemolytic streptococci.

Bone infections caused by susceptible strains of *S aureus* and/or *Proteus mirabilis*.

Genitourinary tract infections, including acute prostatitis, caused by susceptible strains of *Escherichia coli*, *P mirabilis*, and *Klebsiella* sp.

Contraindication: Known allergy to cephalosporins.

Warnings: KEFTAB SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Keftab in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Keftab should be administered cautiously in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy and lactation. Cephalixin is excreted in mother's milk. Exercise caution in prescribing Keftab for these patients.
- Safety and effectiveness in children have not been established.

Adverse Reactions:

- *Gastrointestinal*, including diarrhea and, rarely, nausea and vomiting. Transient hepatitis and cholestatic jaundice have been reported rarely.
- *Hypersensitivity* in the form of rash, urticaria, angioedema, and, rarely, erythema multiforme, Stevens-Johnson syndrome, or toxic epidermal necrolysis.
- *Anaphylaxis* has been reported.
- *Other reactions* have included genital/anal pruritus, genital moniliasis, vaginitis/vaginal discharge, dizziness, fatigue, headache, eosinophilia, neutropenia, and thrombocytopenia; reversible interstitial nephritis has been reported rarely.
- Cephalosporins have been implicated in triggering seizures, particularly in patients with renal impairment.
- *Abnormalities in laboratory test results* included slight elevations in aspartate aminotransferase (AST, SGOT) and alanine aminotransferase (ALT, SGPT). False-positive reactions for glucose in the urine may occur with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

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INDIANA MEDICINE offers its readers a Continuing Medical Education series of articles prepared by the faculty of the Indiana University School of Medicine. The program is coordinated and supported by a grant from the school's Division of Continuing Medical Education.

As an organization accredited for continuing medical education, the Indiana University School of Medicine certifies that this CME activity meets the criteria for one credit hour in Category 1 for the Physician's Recognition Award of the American Medical Association, provided it is used and completed as designated.

To obtain Category 1 credit for this month's article, complete the quiz on page 165.



Preoperative and Postoperative Radiation Therapy in Non-Small-Cell Lung Cancer

JOSEPH F. MONTEBELLO, M.D.
Indianapolis

THERE IS UNIFORM agreement among clinicians that surgery is the treatment of choice for operable non-small-cell lung cancers. Unfortunately, only a minority of these patients will be cured. Attempts of cure may be made with radiation in those patients who have limited disease confined to the chest, but refuse surgery, or are not suitable for surgery because of medical or technical reasons. Even

fewer of this latter group will be cured.

Attempts to improve survival have resulted in an approach of combined surgery and radiotherapy. This has taken the form of preoperative or postoperative irradiation.

Preoperative Irradiation

In theory, preoperative irradiation should be able to increase the resectability of a tumor, control lymph node metastasis that may not be resectable, irradiate subclinical extension of tumor out of the margins of resection, decrease the incidence of post surgical recurrence and possibly decrease distant dissemination of viable malignant cells.^{1,2}

A number of clinical studies have been undertaken to evaluate the effectiveness of preoperative irradiation.

In 1964, F.G. Bloedorn reported on 192 patients who were selected for preoperative irradiation.³ The patients selected consisted of 83 operable and

109 inoperable cases. If inoperable, the disease had to be limited to one side of the chest with or without lymph node metastasis to the mediastinum, scalene, or supraclavicular areas and no pleural effusion could be present. All individuals were treated with ⁶⁰Co generally to total tumor doses of 5500 cGy to 6000 cGy over six weeks. After irradiation, 98 of the 192 patients went to surgery. Of the 83 initially operable cases, 46 underwent surgery, with 43 having tumor resection. Three of these were found to be unresectable.

The remaining 37 patients did not undergo surgery because of refusal of operation (8), development of metastases (15), or determination by attending physician that the patient was a poor surgical risk (14). Twenty-three percent of patients successfully completing the combined therapy experienced a survival of one year or more as compared to 16% for the whole group of initially operable cases.

Correspondence: Joseph F. Montebello, M.D., Assistant Professor, Dept. of Radiation Oncology, Indiana University School of Medicine, Radiation Therapy 071, 535 Barnhill Drive, Indianapolis, Ind. 46223.

The 40 patients who were not resected, but had radiation only, had a one-year or more survival rate of 7.5%.

Of the 109 cases initially classified as inoperable, 52 were operated on. Resection of tumor was possible in 39. Of the remaining 57 patients, nine refused surgery, 35 developed distant metastases, and 13 were considered poor risks. The survival rate at one year or more for the whole group was 12%, while for the 39 patients successfully completing combined therapy, the survival rate at one year or more was 23%. Those 70 patients who were not resected but were treated with ^{60}Co only had a one-year or more survival rate of 5.7%. Although the improved survival reported for patients successfully completing their treatment of radiation followed by surgery may have been due to selection, this study did show the ability of radiation to sterilize local carcinoma in a high percentage of cases.

Of the 192 patients considered for combined treatment, 53 had a diagnosis of mediastinal lymph node metastases. Thirty-nine patients had histological proof of mediastinal lymph node metastases by biopsy obtained at thoracotomy. Seventeen of these were reoperated on following irradiation and nine were found to have negative mediastinal lymph nodes. Two of these patients were alive at two and three years.

Examination of the surgical specimens revealed that the primary tumor was eradicated in 35% of cases. For patients undergoing the complete treatment, the complication rate was high. Of 82 patients undergoing resection following irradiation, 24 died from postoperative complications, mainly dehiscence of the bronchial stump with empyema and the development of a bronchopleural fistula.

In 1968, P.M. Rissanen⁴ reported on the autopsy findings of 67 cases of lung cancers who received 4000-7000 cGy in five to 10 weeks, with the usual dose being 4500-5000 cGy over five to eight weeks. The mean survival period was

nine months. Eighteen cases of the total series (30%) had no cancer found in the treatment area. Eight of these patients died from distant metastases; the remaining 10 patients died from other causes such as pneumonia, heart failure or pulmonary embolus.

Although preoperative radiation therapy has been found to be effective in sterilizing local disease, it has been difficult to show that this translates into increased survival. In some cases, it may be detrimental. An important study illustrates this point. In 1970, T.W. Shields reported on a prospective study carried out by the Veterans Administration Surgical Adjuvant Cancer Chemotherapy Group.⁵ Three hundred and thirty-nine patients were admitted to the study. Eight were found ineligible, four from each group—surgery plus preoperative irradiation and surgery alone. Criteria for this study included histological proof of bronchogenic carcinoma which was suitable for thoracotomy. These individuals were randomized to preoperative irradiation, with the majority of patients receiving between 4000 and 5000 cGy over four to six weeks to be followed in four to six weeks by thoracotomy (166), or to thoracotomy alone (165).

Of the surgery-only group, 153 patients (93%) underwent thoracotomy (93%) and 90 (55%) of these underwent resection. Of the preoperative irradiation group, 106 patients (64%) underwent thoracotomy with 86 patients (52%) actually having resection. Seventy-four patients (86%) of the resections in the x-ray group and 66 patients (74%) of the surgery-only group were considered clinically to be curative with no gross disease remaining. Examination of the operative specimens and biopsies classified the resections as curative in 85%, and 91% in the irradiation and surgery-only groups, respectively. Twenty-three (27%) of the resected specimens in the radiation group showed no recognizable cancer. Cancer was found in all of the operative specimens of the surgery-only group.

Postoperative complications occurred more often in the irradiated group, but these differences were not significant. Operative mortality was 16% in the surgery-only group and 12% in the preoperative irradiation group. In both groups, patients actually having resection experienced a 12% operation mortality.

At one year after randomization, the survival rate of the resected irradiated group was 44%. In the resected surgery-only group, the one-year survival rate was 60%. This was significant at ($P < 0.05$). Analysis of the survival data showed that the survival difference was concentrated in the first six postoperative months.

Increasing radiation doses appeared to have an adverse effect upon survival. In patients with negative nodes, a greater difference was observed in survival between the two treatment groups with a poorer survival in the irradiated group. This was less pronounced in those patients with positive lymph nodes.

Of the 23 irradiated patients with no tumor in the resected specimen, survival was similar to or slightly better than that of patients who had residual tumor in the resected specimen, but was less than that of the surgery-only patients.

It was postulated that the increased time interval between randomization and the definitive removal of the tumor in the irradiated group may have had an adverse effect. It was also postulated that irradiation may have had an adverse effect upon the patient's cardiopulmonary reserve which was then subjected to further impairment by subsequent surgery.

Survival of the patients randomized to immediate surgery, but who were not operated upon, was not significantly different from those who received irradiation and were not operated on. In addition, patients who underwent only thoracotomy without resection had a similar survival as those patients who had irradiation prior to thoracotomy without resection. The major dif-

ference in survival was seen in those patients who underwent resection.

In 1975, the Committee for Radiation Therapy Studies reported on the final results of two collaborative studies involving 17 medical centers.⁶ In one part of the study, "clinically operable patients," defined as individuals without evidence of tumor extension beyond the lung, were randomly assigned to immediate surgery (278 patients) or to preoperative irradiation of 4000-5000 cGy in four to five weeks followed by surgery (290 patients). The five-year survival rate was 14% for prior irradiation and 16% for immediate surgery. Preoperative irradiation did not improve survival over surgery alone in this group of patients.

In the second part of the study, 425 patients with regional involvement only were classified as "clinically inoperable without radiotherapy." These individuals were referred as potentially operable to distinguish them from patients who would not be suitable for resection under any circumstances. Following irradiation, 152 of these patients were considered resectable. They were then randomized to surgery or no-surgery groups. Seventy-four patients were randomized to no surgery, although three requested surgery and received it. Survival at five years for this group was 6%. For those assigned to surgery, five-year survival was 8%. Combined modality in this group of patients did not appear to offer any survival advantage over radiation therapy alone.

There may be a role for preoperative irradiation in selected cases as demonstrated by D.M. Sherman.⁷ In 1978, Sherman, *et al* reported on 53 patients who were considered clinically marginally resectable because of advanced localized (Stage III) disease and in whom dissemination of disease had not been demonstrated. Patients received 3000 cGy in 10 treatments in two-and-a-half weeks (46), 3600 cGy in three weeks (6), or 4200 cGy in four weeks (1). Of these individuals, 46 underwent thoracotomy and in 38 of

them, all gross tumor was removed. Ten patients also underwent postoperative irradiation of 2100 to 3200 cGy because of residual disease (7) or being unresectable (3). The five-year survival rate of the total group of 53 patients was 18%. For the 38 resectable patients, the five-year survival rate was 27%, and for the 20 resectable patients with epidermoid carcinoma, it was 31%.⁷

Superior sulcus tumors represent a special case in which preoperative irradiation is often advocated. These tumors represent about 3% of all lung cancers. Because of the location of these tumors, the neural structures of the thoracic inlet may be invaded by direct extension. Areas of potential involvement include the C8, T1, and T2 nerve roots, the lower trunk of the brachial plexus, the intercostal nerves, the stellate ganglion, and the sympathetic chain, as well as other adjacent ribs and vertebrae. These tumors will typically produce a characteristic syndrome of shoulder pain which may radiate to the axilla or scapula, or down the arm usually in an ulnar distribution. Atrophy of the hand muscle may occur. Swelling of the extremity may result from pressure on the blood vessels. Horner's Syndrome often will be present.

Although these tumors are frequently squamous cell carcinoma, other histologies are not rare. D.L. Paulson has reported a 34% five-year survival in 61 patients treated over a 19-year period using preoperative irradiation and extended en bloc resection.^{8,9} Similar results are described by J. Miller.¹⁰ R. Komahi observed the effects of irradiation alone on 36 patients with doses ranging from 4000 cGy in four weeks to 6400 cGy in six-and-a-half weeks. Five-year survival was reported at 23%.¹¹

Postoperative Irradiation

Postoperative irradiation has been studied as a possible method to improve survival following resection of lung cancer. In a number of studies,

some of which included autopsies, it has been shown that preoperative irradiation could eradicate primary local tumor and metastases to the regional lymph nodes. The effectiveness of irradiation is mitigated, however, by the propensity of lung cancer to metastasize distally. This is illustrated by the work reported by M. Matthews and by C. Mountain.

M. Matthews, *et al* reported on 140 autopsies of patients who had been placed on the Veterans Administration Surgical Adjuvant Group (VASAG) protocol, and who had received a curative surgical procedure for lung cancer and had died within 30 days of surgery. In addition, she reported on 62 similar patients who had died within 30 days of curative surgery at the Roswell Park Memorial Institute or in the Surgical Collaborative Adjuvant Study (RPMI-SCAS).¹² Of these 202 patients, 73 (36%) were found at autopsy to have persistent disease either as distant metastasis and/or residual local disease. Twenty-four or 12% of these patients were found to have local disease only, that is, disease limited to the bronchial stump, hilar, or mediastinal lymph nodes.

C. Mountain reported on the first observed recurrence of metastasis after what was believed to be a complete resection. He found that 72% of patients who failed did so outside the ipsilateral hemithorax, and 7% failed both regionally and distally.¹³

In 1962 R. Paterson, *et al* reported on the use of postoperative irradiation for resectable lung cancer following pneumonectomy. A total of 202 patients were entered on this study with 99 assigned to pneumonectomy alone, and 103 assigned to pneumonectomy plus 4500 cGy, using a 4 MV linear accelerator. They reported a three-year survival rate of 36.4% for pneumonectomy alone versus a 38.0% survival rate for those receiving pneumonectomy plus the full course of radiation therapy. The author felt that postoperative irradiation added nothing to survival.¹⁴

In 1972 M. Kirsh, *et al* reported on 232 patients undergoing curative resection. The absolute five-year survival rate for the entire group was 29.2%. Mediastinal node metastases were found in 48 patients who survived surgery. Of these patients, 36 received 5000 to 5500 cGy postoperative irradiation, using cobalt 60 or cesium 137. Seven (19.4%) individuals survived for five years. There was no five-year survival in 12 patients with mediastinal nodes who received no irradiation.^{15,16}

N. Green, *et al* reported in 1975 on 219 patients with resectable tumors of whom 142 underwent lobectomy and 77 had pneumonectomy. Postoperative irradiation was given to 125 patients with an average midline dose of 4400 cGy. The tumor dose ranged from 3000 to 6000 cGy. Fifty-four irradiated patients survived for five years, with 25% and 23% of patients treated by lobectomy and pneumonectomy respectively surviving for five years. Five-year survival for the group treated only by surgery was 15/94 (16%); but, 30/125 (24%) of patients treated by surgery and postoperative irradiation survived for five years. Patients without hilar or mediastinal lymph node involvement and treated by surgery alone had a 14/64 (22%) five-year survival rate, while those receiving surgery plus irradiation had a 16/59 (27%) survival rate. Patients with nodal metastasis who were treated by surgery alone had a 3% five-year survival rate. Those node-positive patients receiving postoperative irradiation had a 23/66 (35%) five-year survival rate. This was significant at $P=0.01$.

In 1980 P. Van Houtte reported on the use of postoperative irradiation in 175 patients randomized either to no irradiation (92 patients) or to 6000 cGy administered postoperatively in six weeks (83 patients).¹⁸ The five-year survival rate was 24% in the irradiation group and 43% in the control group. For squamous cell carcinoma, a detrimental effect from the irradiation was observed in the T2 group. Irradiation did appear to improve local control

with four of 26 (15%) failures occurring locally in the irradiated group while 10 of 39 (26%) in the control group experienced local failure. However, this study required that the patients' tumor be completely removed and with no invasion of lymph nodes present.

It would be expected that postoperative irradiation would have no beneficial effect for patients who have no local residual disease following surgery. In patients with both residual local disease and distant metastasis, radiation therapy also would not be expected to improve survival rates. If postoperative irradiation is to show any beneficial effect, it would be in those patients with local residual disease without distant metastasis. From the above studies, it would seem there may be some benefits from giving postoperative irradiation to patients with known residual disease. Unselected application of postoperative irradiation, however, is unlikely to be beneficial.

In select patients, preoperative irradiation might enhance survival rates in marginally resectable but localized lung cancers and in superior sulcus tumors. In select patients with hilar or mediastinal lymph nodes, postoperative irradiation might improve survival. Non-selective application of radiation therapy will fail to show benefits and may be detrimental.

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Reversible confusional states have been reported on occasion, predominantly in severely ill patients.

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Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions, nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances, postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, parosmias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

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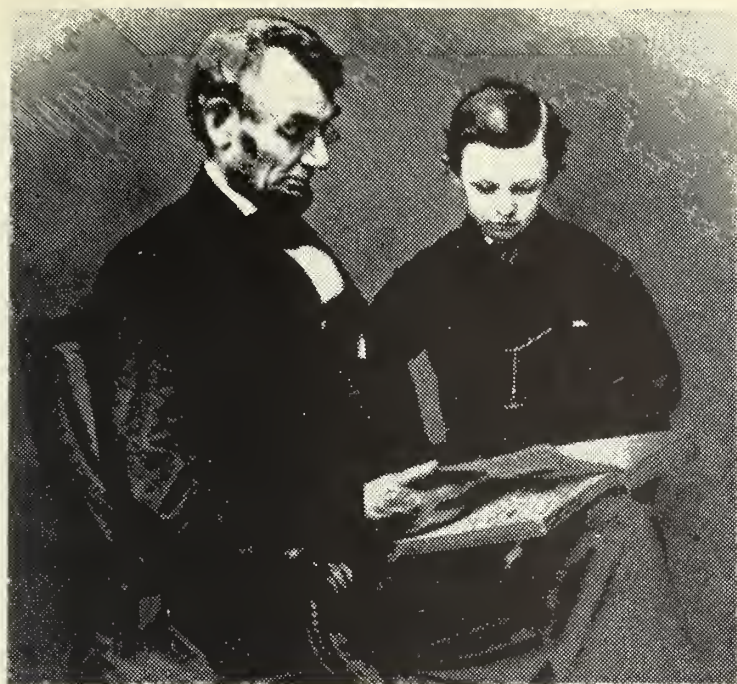
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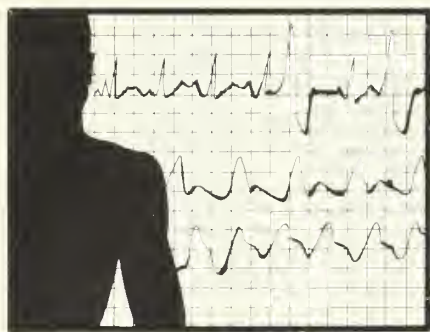
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Evaluation of Pulmonary Infection in AIDS Patients



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Indianapolis

THE EPIDEMIC OF human immunodeficiency virus (HIV) infection continues to grow, with over 28,000 AIDS cases diagnosed in the U.S. through 1986. Half of all AIDS patients will develop respiratory disease. Therefore, this paper will review the diagnostic evaluation of pulmonary infection in AIDS patients, emphasizing the role of invasive diagnostic procedures.

There are a variety of respiratory complications associated with HIV infection (*Table 1*).¹ Some infections, such as pneumocystis, are diagnostic of AIDS while others, such as *M. tuberculosis*, can present in any HIV infected person. The relative frequency of specific pulmonary diagnoses in one series is presented in *Table 2*.² *Pneumocystis carinii* is the most common pulmonary complication, accounting for 63% of all opportunistic infections in the first 16,500 AIDS patients in the U.S.³ About 10,000 cases of *pneumocystis carinii* pneumonia in association with AIDS were diagnosed in 1986 alone.³

The clinical presentation of *pneumocystis carinii* pneumonia is characterized by fever, dyspnea, non-productive cough and abnormal oxygenation manifested by an elevated alveolar-arterial gradient on blood gas analysis.⁴ The chest x-ray reveals diffuse, bilateral interstitial infiltrates in over 80-90% of cases. Unusual x-ray features include cavitation, pleural effusion and spon-

taneous pneumothorax. The presence of intrathoracic adenopathy actually suggests the presence of a different diagnosis and at least 5% of patients with *pneumocystis pneumonia* have normal chest x-rays.^{5,6}

Not all AIDS-related pneumonias involve unusual pathogens. Bacterial pneumonias account for up to 10% of AIDS-related pneumonias, with the incidence of pneumococcal and *hemophilus* infections being particularly increased. These pneumonias can mimic *pneumocystis* both clinically and on x-ray, although two-thirds have lobar infiltrates typical of bacterial pneumonia.⁷ In contrast to the early experience (*Table 2*), *Legionella* infections are increasingly rare in AIDS patients today and many groups have abandoned empiric erythromycin use in AIDS patients.³ Note that trimethoprim/sulfamethoxazole (TMP/SMX) will cover both *pneumococcus* and *hemophilus*, although other antibiotics are generally preferred due to the frequent adverse effects of TMP/SMX in AIDS patients.

Tables 1 and 2 illustrate the broad differential diagnosis for pneumonia in AIDS patients. Given this information, where does one start in evaluating respiratory disease in the AIDS patient? Any diagnostic approach must recognize the relative incidence of the various infections, the yield using available diagnostic techniques, and the limits of current therapy in dealing with this universally fatal disease.

In occasional symptomatic patients, one difficult decision may be deciding if a pulmonary infection is even present. Since *pneumocystis* is the primary consideration, the question really becomes one of ruling out

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TABLE 1
Pulmonary Complications of HIV Infection

- A. Opportunistic Infections Diagnostic of AIDS
 1. pneumocystis carinii pneumonia
 2. pulmonary toxoplasmosis
 3. extraintestinal (*eg*, pulmonary) strongyloidiasis
 4. bronchopulmonary candidiasis
 5. pulmonary cryptococcosis
 6. disseminated histoplasmosis
 7. disseminated *M. avium-intracellulare*/*M. kansasii*
 8. cytomegalovirus pneumonia
 9. herpes simplex pneumonia
- B. HIV-Related Pulmonary Infections
 1. tuberculosis
 2. nocardiosis
- C. Presumed HIV-Related Pulmonary Disorders
 1. pyogenic bacterial pneumonia
 2. lymphoid interstitial pneumonitis
- D. AIDS-Related Pulmonary Neoplasia
 1. Kaposi's sarcoma
 2. Non-Hodgkin's lymphoma

Modified from: *Am Rev Resp Dis*, 135:504, 1987¹

TABLE 2
Pulmonary Disorders in 441 AIDS Patients

Pneumocystis carinii pneumonia	373	(80%)
without other infection	255	(55%)
with coexisting infection	118	(25%)
CMV	50	Legionella 9
<i>M avium-intracellulare</i>	57	Cryptococcus 8
<i>M tuberculosis</i>	15	Other 3
Other pulmonary infections	93	(20%)
<i>M avium-intracellulare</i>	37	
Cytomegalovirus	18	
CMV + <i>M avium-intracell.</i>	5	
CMV + Cryptococcus	1	
Pyogenic bacteria	11	
Legionella	10	
Fungi	6	
<i>M tuberculosis</i>	4	
Herpes simplex	2	
Toxoplasmosis	1	
Kaposi's sarcoma	36	

Modified from *N Engl J Med*, 310:1682, 1984²

pneumocystis. Despite the various presentations of this protozoan, there is a reasonable way to exclude the diagnosis in selected cases. As noted earlier, a normal chest x-ray and a normal A-a gradient are uncommon. Gallium scanning has been found to have a sensitivity for pneumocystis in the range 94-100%.⁶ The gallium scan is not specific, in that abnormal lung uptake does not prove that pneumocystis is present. Thus, the combination of a normal chest x-ray, a normal A-a gradient and a normal gallium scan will exclude over 95% of pneumocystis cases. This triad might be used to screen patients where the index of suspicion is low. We have used this approach to avoid bronchoscopy in one asthmatic patient with known AIDS-related complex and increased dyspnea.

If an AIDS (or suspected AIDS) patient has pulmonary infiltrates, or is

symptomatic with abnormal oxygenation or an abnormal gallium scan, then the focus turns to identifying the pathogen(s), with the knowledge that pneumocystis is present in the majority of these cases. Empiric therapy with TMP/SMX may be begun if the patient is acutely ill; this will not interfere with later pneumocystis stains.

The next step is sputum examination. Routine gram stains may reveal evidence of a bacterial infection. Fungal and AFB sputum stains and blood cultures also may provide a tentative diagnosis.

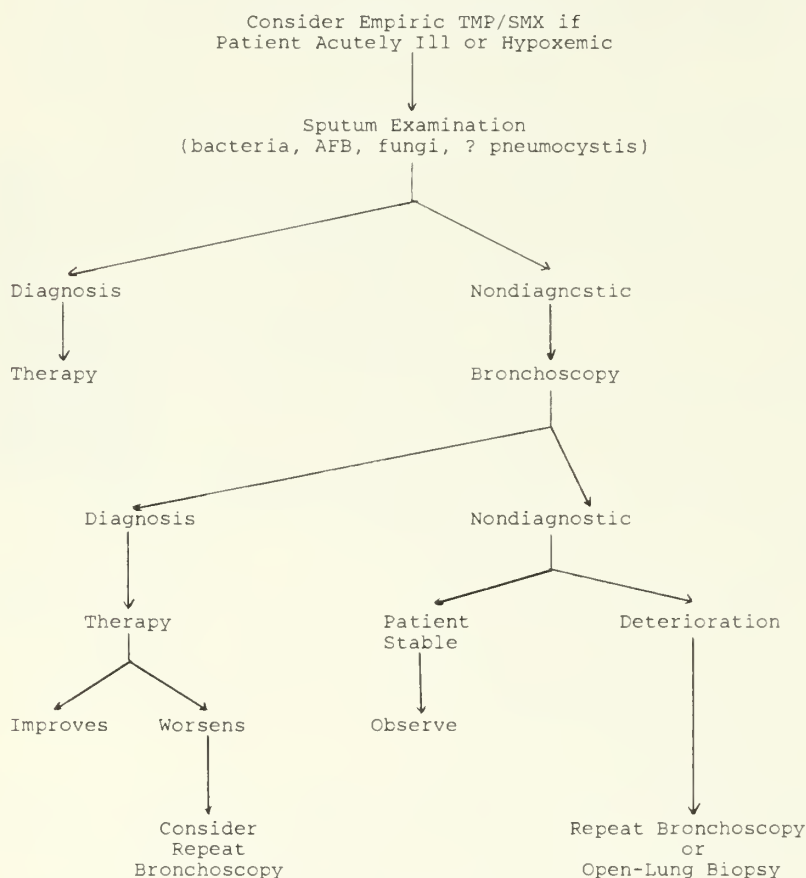
Eighty percent of pneumocystis patients have a non-productive cough. However, two series have demonstrated that ultrasonic nebulization of either 3% or 5% saline, inhaled for a period of 5-20 minutes, can provide induced sputum samples that are positive for pneumocystis in up to 55% of cases.^{8,9} This offers an inexpensive,

non-invasive method of diagnosing pneumocystis. Sputum induction should not be used to unnecessarily delay other diagnostic procedures, but might be selected in situations where logistics force some delay before an invasive procedure can be performed.

As shown in the *Figure*, fiberoptic bronchoscopy is the preferred method for the diagnosis of pulmonary infection in AIDS. In addition to cases in which sputum microscopy is nondiagnostic, bronchoscopy might also be employed in patients where the sputum diagnosis and the clinical course or x-ray seem incompatible. For example, hilar adenopathy with pneumocystis pneumonia should raise suspicion that another pathogen is also present.

Bronchoscopic techniques have sensitivities for pneumocystis in the range of 94-100%.^{10,11} Bronchoalveolar lavage (BAL) involves wedging the

Suggested Approach to Diagnosis of Pulmonary Infection in AIDS



bronchoscope in a peripheral airway and instilling and suctioning back serial aliquots of solution, thus sampling alveolar cells and other contents. BAL can be performed on patients receiving mechanical ventilation or with coagulopathies, situations in which transbronchial forceps biopsy is generally contraindicated. BAL alone has a sensitivity for pneumocystis up to 97%.¹² Combining BAL with transbronchial biopsy increases the diagnostic yield even higher. If bronchoscopy provides a specific diagnosis, then any empiric treatment can be modified as necessary. If the patient improves, then no further invasive procedures are warranted.

However, there are two situations where further diagnostic procedures might be considered. What if the initial bronchoscopy is diagnostic, yet the patient fails to improve? Barrio, *et al* looked at 13 such patients: repeat bronchoscopy found CMV pneumonia in 2.¹³ Thus, repeated diagnostic procedures will not have a very high diagnostic yield because of the limited therapy available for certain infections usually found. CMV pneumonia and disseminated *Mycobacterium avium* infections are relatively common (Table 2), but even the available investigational agents provide so little benefit that these infections are essentially untreatable.^{14,15} Most experts recommend a

second bronchoscopy if the patient worsens despite therapy following a diagnostic bronchoscopy, although the low diagnostic yield and poor contribution to improved patient survival should be recognized.^{1,13}

What should be done if the initial bronchoscopy is nondiagnostic? Many of these patients may improve without therapy.¹³ If the patient is stable, one might choose empiric therapy or close observation alone. Once again, the diagnostic yield of a second bronchoscopy or open-lung biopsy will be low. However, if the patient deteriorates, most authorities recommend an additional invasive diagnostic procedure.

Open-lung biopsy (OLB) is the ultimate diagnostic procedure for other immuno-compromised patients. Its role in AIDS patients is limited both by the success of bronchoscopy in diagnosing the usual opportunists and by the overall dismal fate for AIDS cases. The literature supports only a very limited role for OLB in AIDS. If an AIDS patient deteriorates despite a diagnostic bronchoscopy, OLB is not generally warranted.¹⁶ OLB might be useful in selected situations where bronchoscopy has been negative or where a coagulopathy or mechanical ventilation prohibit one from using the full range of bronchoscopic techniques (i.e., forceps biopsy).

This paper has outlined one current approach to evaluation of pulmonary infection in AIDS patients. Future developments in diagnostic capabilities, such as nonbronchoscopic lung lavage, and advances in prophylaxis and treatment of the opportunistic infections, may lead to alternate standards for management of this challenging condition.¹⁷

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Cost Awareness by Family Practice Residents of Commonly Used Laboratory Tests, X-Ray Tests and Medications

**First Prize Winner,
Resident Medical Society
Essay Contest**

RAE RINGENBERG, M.D.
Indianapolis

You have just seen a family and have written out their lab requests, prescriptions and orders for appropriate screening radiographs, and they ask, "How much is this going to cost?" As medical consumers, our patients are increasingly cost conscience, thus, this question is becoming more frequent. Unfortunately, our answers are at times inaccurate or vague: "Oh, not very much," or "Well, it is fairly expensive, but you really need this (lab test, screening test or medicine)."

This study is designed to look at the Indiana Family Practice residents' awareness of the cost of lab studies, screening procedures and acute and long-term medications commonly ordered for patients. I hypothesize that residents become more aware of patient costs as they progress from Post Graduate Year 1 (PGY 1) through PGY 3 and, accordingly, their estimates of these costs will become increasingly more accurate. Similarly, I expect housestaff in residencies that have an organized program for increasing awareness of patients' costs to have

more accurate estimates in the specific areas in which they have been instructed.

Methods

A questionnaire was constructed and distributed to all Indiana Family Practice residents attending a state-wide educational meeting. The survey was accompanied by a cover letter explaining the purpose of the survey. Residents were asked to anonymously complete every question and return the form by the end of the day. Estimates of costs, to the nearest dollar, were requested for items in four major groups: lab studies (eight items), screening radiologic procedures (four items), acute illness medications (eight items) and monthly medications (10 items). Each item was to be estimated for outpatient cost, and radiographic costs were to include radiologist's interpretation fees. Medications were specified by dosage and amounts appropriate for either a full course of treatment for acute illnesses or a monthly supply for long-term medicines. The residents also listed their city of residency, year of residency (PGY status), and medical school attended (in-state vs. out-of-state). They were also asked to respond to the following questions:

- 1.) Does your residency have an organized program for keeping you aware of the patient's cost of common medications, lab tests and/or screening procedures?
- 2.) Do you receive inquiries from patients regarding costs of medicines, tests or labs once or more per office day?

- 3.) Do you routinely prescribe generic drugs?

Of 219 family practice residents in Indiana, approximately 90 were present at the October, 1986 meeting. Of these, 65 (72%) returned the questionnaire. All Indiana cities which have family practice residencies were represented. Each hospital affiliated with these residency programs was contacted and asked for its prices for these polled lab tests, screening procedures and medications. Since residents were not asked their specific hospital affiliation, weighted average values were calculated for cities having more than one family practice training program. Weighting was done according to the total number of residents at each program within a city. The cities included Indianapolis, South Bend, Muncie, Ft. Wayne, Gary, Evansville and Terre Haute.

The resident's estimated cost of each item was then standardized by calculating it as a percentage of the actual cost (or weighted average). This standardization allows for comparisons between different cities and different items on the survey. Those residents who did not list their city of residency, ($n = 7$), had their estimates standardized according to a state-wide weighted average.

For each of the 30 items on the survey, means and standard deviations were computed. A student's t-test was used to calculate t-values when these estimates were compared to a hypothetical mean of 100 (essentially comparing standardized percent with an expected value of 100%). A probability of less than .05 was used to indicate

statistical significance. Values also were compared within the following groups:

A. Residents according to the year

of training

B. Residents according to whether they were trained in Indiana or out-of-state

C. Residents according to whether they routinely prescribe generic medicines

D. Residents according to whether they had been in an organized program to teach cost awareness of labs, x-rays and/or medicines.

Where multiple comparisons were made, a one-way analysis of variance was used to calculate the presence of statistical difference. Where only two comparisons were made, a student's t-test was utilized.

To look at the performance of the group as a whole, estimates of outpatient charges were judged to be correct if the response fell within plus or minus 50% of the weighted average. This 50% "grace" was arbitrarily chosen. It was considered representative of a generous, but realistic, expectation of what would constitute awareness of a specific charge, and it is felt to compensate for any error introduced by the varied prices used to calculate the weighted averages.

The lab studies, screening procedures and medications were picked on the basis of their common usage. Koch,¹ in a report from 1981, listed the 100 drugs most frequently used in office practice based on a national ambulatory medical care survey. Of the top 10 prescription medications, seven are included in the current study. Of the remaining 11 medicines surveyed in my study, all but one are in the top 75 most frequently used drugs. The only medication not included is Provera, which has gained an enormous amount of attention recently in its use in conjunction with estrogens for replacement therapy for the prevention of osteoporosis. It would not be surprising if Provera were now among the 100 most commonly prescribed medicines and, because of this, it was included in the current survey.

Results

In comparing the performances of first-, second- and third-year residents for each of the 34 categories (Table 1), two categories were found to show

TABLE 1
Residents' Average Standardized Estimates** of Costs of Commonly Used Lab Tests, Radiographs and Medications

Item	Weighted Average Cost (Dollars)	Mean Estimate (% of ave.)	Min.	Max.	PGY 1	PGY 2	PGY 3
CBC	15	103	40	300	114	102	97
Electrolytes	27	88	15	385	108	85	79
Chem 20	27	113	42	312	131	108	106
Theophylline	26	72*	21	187	74	74	69
Digoxin	34	72*	24	240	88	64	69
TSH	37	88*	22	194	94	82	90
Protime	10	162*	60	429	194	150	154
Urine C&S	34	84*	23	185	96	79	81
Lab Ave.					112 +	93 +	92 +
LS Spine	71	104	26	1000	81	92	131
Chest x-ray	50	94	36	196	80	93	103
Mammogram	101	106	34	336	113 +	83 +	124 +
ACBE	161	97	22	272	100	85	107
X-ray Ave.					93	88	116
Pen v.k.	5	188*	40	750	172	210	176
Amoxicillin	6	218*	38	1000	196	254	194
Keflex	33	145*	25	423	109	151	160
Tri/sulfa	6	301*	83	1250	226	322	326
Erythromycin	9	209*	44	1100	170	262	179
Tetracycline	4	231*	43	833	226	219	246
Doxycycline	9	295*	36	800	255	263	350
Tagamet	72	95	24	348	79	105	96
Acute Ave.					179	225	217
Premarin	6	325*	50	2000	334	376	267
Provera	7	189*	22	1000	215	219	142
Lanoxin	5	371*	40	1333	371	442	295
HCTZ	4	298*	13	2000	285	366	234
Inderal	21	206*	29	889	198	200	217
Theo-Dur	9	492*	56	3000	462	599	402
Dyazide	9	174*	44	500	183	171	172
Synthroid	6	328*	33	2000	297	362	312
Valium	16	158*	25	600	180	149	152
Clinoril	40	95	27	235	99	97	90
Monthly Ave.					262	312	232

* Indicates $p < 0.05$ when value is compared to hypothetical mean of 100%.

** Average standardized estimates are given as percentage of weighted average

+ Indicates significant difference ($p < 0.05$) between scores of first-, second- and third-year residents

TABLE 2
Comparison of Standardized Estimates* in Residents With and Without Organized Programs for Teaching Cost Awareness

	Yes	No
Program for Screening Costs?		
Average estimate for screening costs	98	100
Program for Laboratory Costs?		
Average estimate for laboratory costs	100	97
Program for Medication Costs?		
Average estimate, acute medications	149	216
Average estimate, monthly medications	311	266

* Average estimates are expressed as percentage of actual weighted cost

significantly different results according to the year of the resident. The average cost estimate of all lab studies by 15 PGY 1 residents was 112% of the actual value (standard deviation 22), which was statistically different from the 25 PGY 2's values of 93% (s.d. 21) and 25 PGY 3's value of 92% (s.d. 8). The PGY 2 and PGY 3 values were not significantly different. In a like manner, the PGY 2 values for mammography were significantly less than the PGY 1 and PGY 3 values (83% [s.d. 36] compared to 113% [s.d. 52] and 124% [s.d. 62], respectively). Here, the PGY 1 and PGY 3 values were not statistically different.

One must be cautious, however, in attaching significance to findings when multiple comparisons are being made. Given the total number of comparisons made, one would expect one or two to achieve statistical significance by chance occurrence. The fact that there are no obvious trends in the directions of the differences according to the year of residency may also suggest that this result is a chance occurrence. I conclude that there is no correlation between the year of training and the ability to estimate the costs to outpatients for commonly used labs, screening tests and medications.

Similarly, there was no statistical difference between estimates of costs of acute and monthly medicines by the 86% of residents who routinely

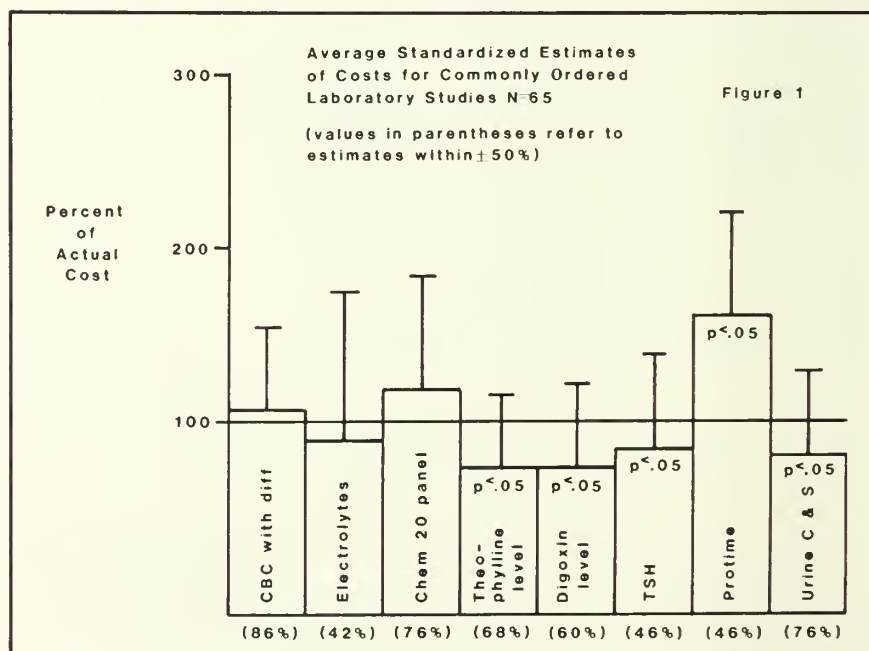
prescribe generics and the 14% who do not. The results in this case (acute medications, generic—205% vs. non-generic—256%; and monthly medications, generic—250% vs. non-generic—352%) show an interesting trend, but do not achieve statistical significance.

One would hope that formal teaching of patient costs in residency programs would greatly enhance ability to predict these same costs. The results do not show evidence of this, however. Thirteen percent of the residents had

training in costs of screening procedures; 21% were taught the cost of lab studies, and 8% had instruction in the price of medications. As can be seen in Table 2, the house staff in residencies that have an organized program for increasing awareness of patient's costs do not give more accurate estimates in the specific categories in which they have been instructed.

Although statistical differences among the previous subgroups are not present, the overall performance of all the respondents on individual items and within major categories is intriguing. Within the laboratory section, five of the eight averages, when compared with a hypothetical mean of 100%, were significantly different (Figure 1). Only estimates for CBC, electrolytes and CHEM 20 were not statistically different from 100. In fact, in three of the eight items, fewer than 50% of the residents estimated the costs within plus or minus 50% of the actual cost.

The estimations for costs of screening radiologic procedures were much more accurate (Figure 2). The averages were from 94% to 106%, and on all four exams the majority of estimates



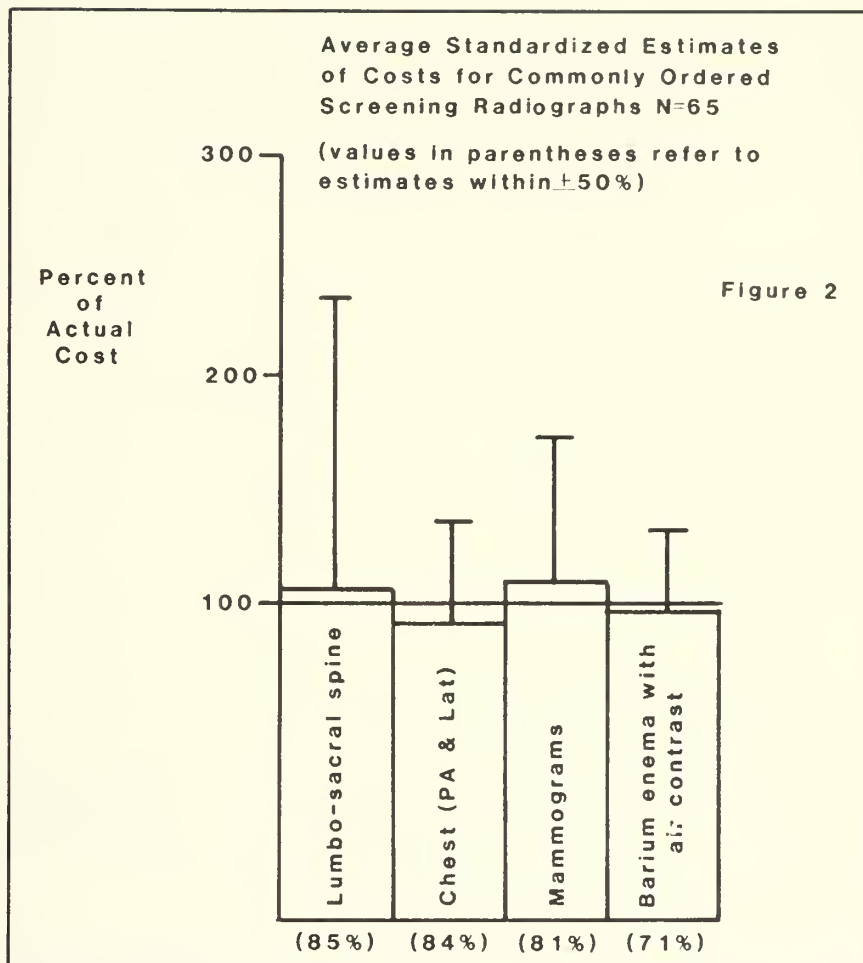
were in the plus or minus 50% range: air contrast barium enema (ACBE)—79%; mammograms—81%; chest x-ray—84% and lumbosacral spine x-rays—85%.

Just when there seems a glimmer of hope for cost awareness, we turn to commonly prescribed medications (*Figures 3 and 4*). Of the 18 medicines involved, only three were estimated at less than 150% of the actual value. The majority of estimated mean averages were two to three times and up to five times the actual cost to the patient. Only two medications, Tagamet and Clinoril, had cost estimate averages within plus or minus 50% of the actual values. In the cases of penicillin, Tagamet, Provera, Valium and Clinoril, a majority of residents made estimates within the plus or minus 50% range. Only 11% of residents estimated the actual cost of Theo-Dur to within 50%. Even Inderal, the most frequently prescribed drug in the U.S.,¹ was estimated to within 50% of its actual cost by only 43% of residents.

Discussion

There is an important role for the physician in determining the cost of health care for patients. Estimates are that allocation of more than 55% of the total health care dollar is determined by the collective clinical decisions of our nation's physicians.⁹ Whether knowledge of specific charges is a determinant of the variability of cost-generating behavior by physicians in practice has not been studied. Very few studies have tried to measure physicians' knowledge of health care charges.

Nagurney² polled 72 housestaff and 26 attending physicians with a 50-item questionnaire with items including in-patient charges, out-patient charges, laboratory fees and medications. A plus or minus 20% allowance was given to be considered correct. Overall, both the residents and attending physicians scored less than 50% correct. In-patient rates and laboratory charges tended to be underestimated while



medications tended to be overestimated. It is noteworthy that these findings are similar to ours.

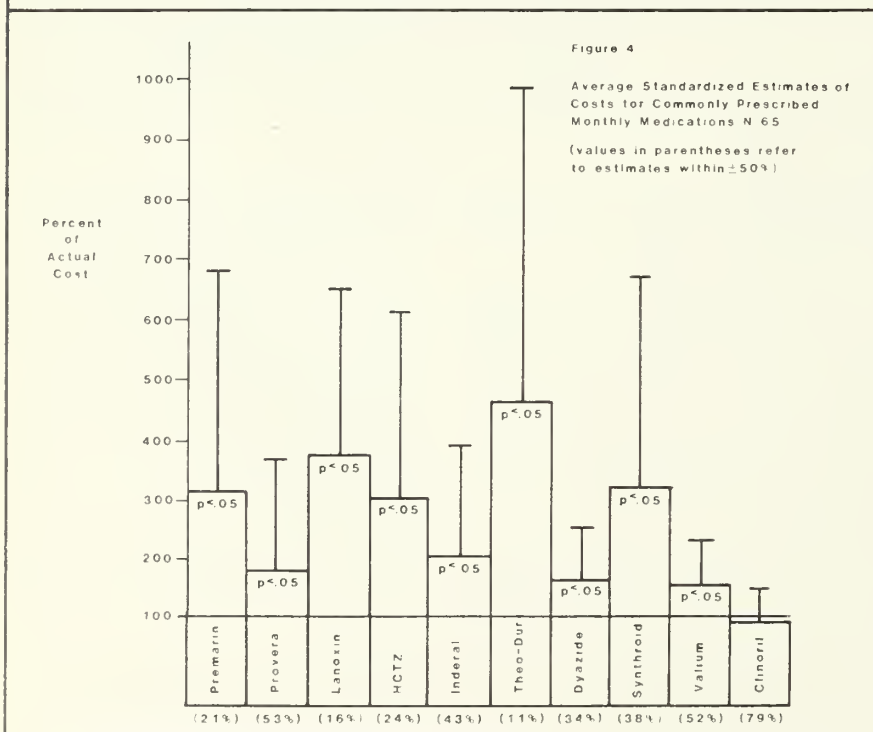
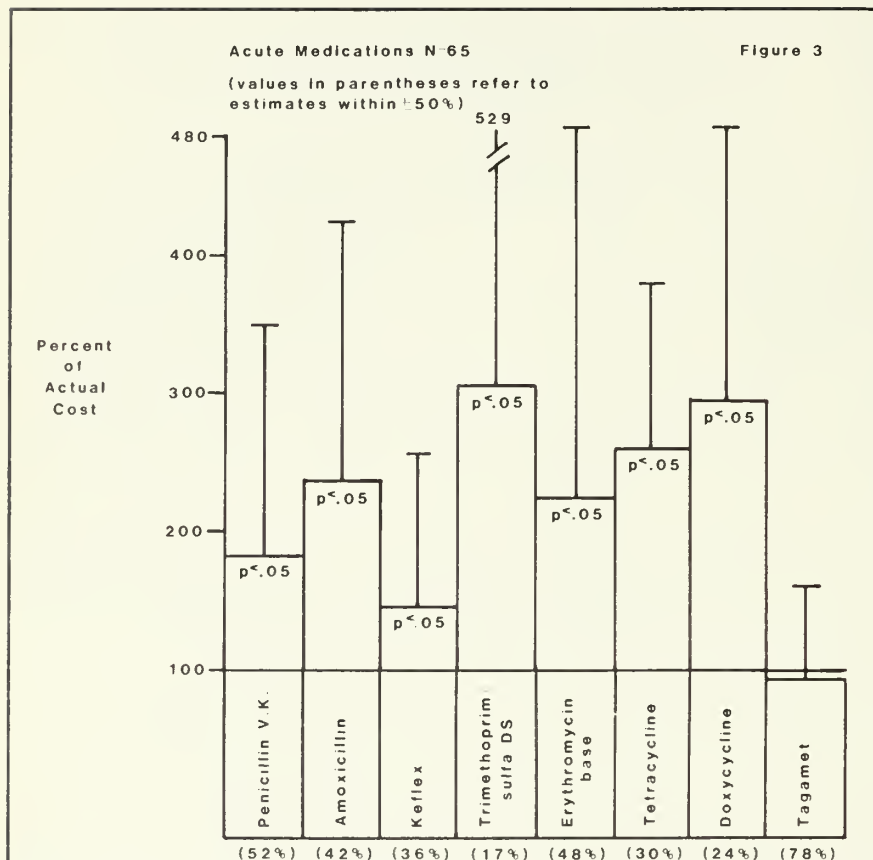
Underestimating costs of laboratory charges may make us less concerned about the costs of tests or repeat studies. On the other hand, overestimating medications costs may impart a reluctance to order a needed medication, or an adequate dosage or amount to fully meet our patients' medical needs.

Skipper¹⁰ surveyed medical students and faculty for costs of 31 laboratory tests. Results were based on 61 responses with a plus or minus 25% range used to denote a correct response. Results ranged from a 45% correct rate for clinical faculty to 28%

for first-year medical students, with residents being intermediate.

Many researchers have tried to answer the question of why there is a relatively low awareness among physicians of economic factors in clinical decision making.^{2,3,4} Many physicians are possibly not aware of their importance, individually, in determining nation-wide health care costs. It may be that many feel there is no incentive to learn charges or be cost effective. "The individual physician who is not at economic risk suffers little by ignoring costs and gains less by curtailing them."²

Unfortunately, at times it is often difficult to obtain actual prices from hospitals for their products and ser-



vices. In calling hospitals across the state to obtain the prices for this study, many individuals would willingly share this information. On several occasions, however, hospitals and individual departments within hospitals were unwilling to provide this information without prolonged explanations and multiple calls. In two cases, hospitals were not willing to share their prices in spite of explanations about why the information was requested. This may have introduced error into the results, especially if these hospitals had prices significantly different from the weighted averages.

What should be readily accessible health care cost information is too commonly a secret. Pity the poor patient trying to "shop around" for the best prices in town. Certainly patients ought to be able to ask their physicians about costs. Doctors cannot pretend to practice cost-effective medicine without having some realistic knowledge about prices. Certainly current teaching methods are too few; and, when present, they are apparently ineffective. With over two-thirds of residents being asked about costs every clinic day, it is imperative that individual residents and teaching physicians know the right answers.

This leaves us with the question of what can be done to teach physicians the right answers. Certainly the results from this study show ineffective teaching programs when it comes to estimating actual costs of commonly used tests and medicines. Basic teaching should stress knowledge of health care charges, awareness of the effectiveness of various interventions and impetus to use both to maximize cost-effectiveness. Determining the baseline level² of each physician's awareness of costs and improving this level through educational programs would be an appropriate first step. Competent cost-effective practice of medicine demands that physicians begin this walk.

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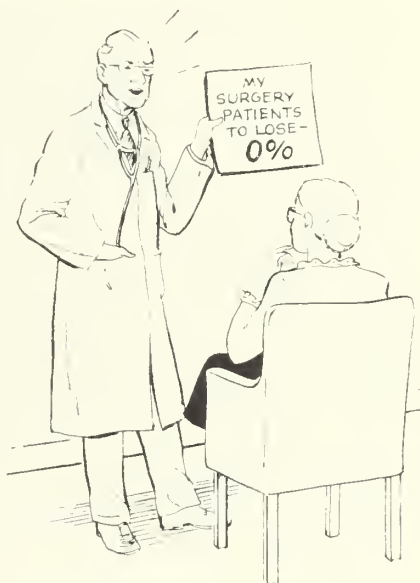
THE COUNTRY DOCTOR

TED L. GRISELL, M.D.
Indianapolis

AN AUTOBIOGRAPHICAL novel, *The Country Doctor*, was written by a Dr. Arthur Hertzler, who lived in Kansas and practiced medicine there during the Depression. He became rather famous because of the scope and numbers of exogenous thyroidectomies that he had performed at a time when exogenous thyroid enlargement was rampant due, presumably, to the lack of iodine in the diet of the people in this region.

Dr. Hertzler was a fascinating individual and to be personally acquainted with him at this time was a big plus in my career. I recall the story that he told which is an interesting in-

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sight into the practice of medicine. It seems that one of his lady patients with a huge goiter was approaching the need for thyroid surgery because of compression on her windpipe. Dr.

Hertzler certainly had recommended the thyroidectomy to remove this huge mass that involved her windpipe and esophagus.

Just as the final arrangements for hospitalization and surgery were made, the lady appeared one day to report she had decided to refuse to have this surgery. She had seen an article somewhere where a certain percentage of thyroid patients did not survive the operation of the thyroidectomy and so, therefore, she was going to refuse to have this operation performed even though she admittedly realized that something serious was imminent and was endangering her health.

After considerable discussion, rather disgustingly, Dr. Hertzler stated that he told the lady, "I don't know why you would refuse to have surgery; after all, I have already lost my percentage of patients this year and the prospects of having anything happen to you should be zero." She said, "Well, why didn't you tell me that in the first place? Go right ahead and get it scheduled and let's get it over with."

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New IUPUI Facility to Host ISMA's Leadership Conference

THANKS TO ITS convenient location near the heart of the Indianapolis medical district, the new Lincoln Hotel and Conference Center at IUPUI finds itself in the enviable position of being able to offer something special to just about everyone associated with health care.

For hospital patrons and their families there is caring attention and reduced rates. Patients and/or families of patients who stay at the Lincoln Hotel are eligible for a special \$39 room rate, as well as numerous services routinely offered by this first-class establishment.

For planners and attendees of medical conferences and symposiums, a wide variety of comprehensive meeting services and state-of-the-art convention facilities are available.

Dallas-based Lincoln Hotel Corporation operates the new facility on the campus of Indiana University-Purdue University at Indianapolis (IUPUI) under a management agreement with University Development Corporation, owners of the property. The hotel was developed by Cornerstone Companies, Inc. Official grand opening ceremonies for the 278-room hotel were held last July.

"We see this outstanding new center as a prototype of the future," Lincoln President Edward E. Mace said. "Not only does it bear the stamp of luxury and distinction for which Lincoln Hotels is known, it also embodies every conceivable hospitality and communications service to meet the needs for today's conferences and meetings."

This article was prepared for publication by Read Poland Associates, Austin, Texas.



The Courtyard

Encompassing the entire city block now known as University Place, this new complex is located in the center of the university campus just west of downtown Indianapolis. Its strategic location encourages wide utilization by providing a unique service-oriented link between existing university, medical and sports facilities.

The Lincoln Hotel aims its appeal at the business, upscale tourist, sports teams and convention markets. It served as headquarters for CBS Sports

for its television coverage of the recent Pan American Games.

The 10-story luxury hotel includes two presidential suites, two vice presidential suites and 12 junior suites, as well as standard guest rooms. Housed on the hotel's top two floors are 60 executive-class Lincoln Club rooms with special amenities such as express check-in and check-out, a lounge and full concierge services. The hotel also provides accommodations for extended-stay guests and more than

8,000 square feet of meeting space.

Guest services are geared to satisfy a variety of needs. They include on-the-hour transportation to shopping and area attractions, retail and leased food outlets, airport transportation available through the concierge, gift and sundry shops, free transportation to downtown and university locations,

nual medical convention, a myriad of facilities and advanced technical support assure a satisfying conclusion.

Additional features of the conference center include:

- state-of-the-art audio/visual facilities, featuring slide and VTR editing and production capabilities,
- fully equipped news media center,

rant. A richly wooded decor contrasts delightfully with the light, informal fare served from the snack menu. Two featured items are crawfish tails and "sliders," the bar's version of a Midwestern favorite.

Adjacent to the bar is Chancellor's Restaurant, specializing in New American cuisine prepared using Euro-

The Mid-Year Leadership Conference

Workshops dealing with the media, medical ethics, peer review/licensing and finances will highlight this year's ISMA Mid-Year Leadership Conference, scheduled for Saturday, April 23, at the Lincoln Hotel and University Conference Center in Indianapolis.

The conference, which will focus on enhancing and improving communications among Indiana's physician leaders, is aimed at trustees, alternate trustees, county society presidents and secretaries, and state specialty society leaders.

Since all details of the conference were not firm at press time, INDIANA MEDICINE will publish available details in next month's issue. Meanwhile, queries should be directed to Mike Huntley at ISMA headquarters.

car rental facilities, same-day laundry service, valet parking and 24-hour babysitting service.

The Lincoln Hotel also includes or provides access to a variety of recreational amenities, such as:

- a 50-meter Olympic-size swimming pool,
- tennis courts,
- an outdoor running track,
- two health clubs with Polaris weight machines.

Only a few steps from the Lincoln Hotel via connecting concourse, more than 30,000 square feet of meeting space and state-of-the-art collateral equipment is available. A full-time conference coordinator is part of the permanent staff. Complete registration staffing and service also are provided. Meeting rooms range in size from a 338-seat auditorium with four simultaneous-translation booths to intimate executive board rooms. Thus, whether plans call for a staff meeting of health care professionals or an an-

- advanced-design comfort seating,
- teleconference capabilities,
- series of theater-style presentation rooms,
- computer training room,
- freedom-of-choice food service, ranging from formal fare to deli-style buffet to fast food.

This food service includes an astonishing variety of selections. From the casual elegance of Chancellor's Bar and Restaurant to the relaxed informality of The Bistro and Lobby Lounge to the courteous efficiency of the Food Court, there's a food outlet to please every palate and pocketbook.

The Lobby Lounge, with its overstuffed furniture in soothing greens and golds, is the ideal gathering place for cocktails or a quiet business discussion. A grand piano and nightly entertainment also make this lounge a perfect setting for an intimate rendezvous.

Those who prefer a more club-like atmosphere will find it in the bar section of Chancellor's Bar and Restau-

pean cooking methods and presented in an unpretentious manner. The restaurant continues the black/burgundy/deep green color scheme of the bar, blending it with wall upholstery, mirror panels and brass fixtures to create a dramatic effect. In this casually elegant setting, guests may choose from a savory selection of grilled seafoods, meats and whole vegetables and a delectable array of classic desserts.

The Bistro is a more informal option geared for quick service and great food. Set in contemporary art deco surroundings, The Bistro features a self-serve upscale, deli buffet. Strategically situated near the crossroads of the hotel and conference center, it appeals to the hotel's convention and business meeting markets.

To broaden its scope to include the nearby campus crowd, the Lincoln Hotel features a retail food court and shopping area. Commercial fast food vendors provide quick meals at inex-

pensive prices, ideal for hectic "grab a bite when you find the time" days.

With due respect to such range of the hotel's food and beverage operation, banquets and catering is where the F&B staff really shines. Whether the need is for a simple coffee break or a lavish reception, the service is courteous and efficient, the presentation elegant and sophisticated, the food tantalizing and delicious.

Well-known interior designers Wilson & Associates created the concept of a transitional hotel with large, comfortable overstuffed furnishings complemented by traditional pull-up chairs, breakfronts and display tables. Materials range from marbles and granites to pastel washed oak panels and upholstered panels. The entire effect is tied together by the color celeston green in the lattice-designed Axminster carpet and the whitewash

pastel paneling, both of which appear throughout the hotel.

A sampling of this concept can be seen in two contrasting areas of the hotel: the main lobby and the Sports Bar. The main lobby features overstuffed chairs of corded impressionistic silk accented by green throw pillows and matching chairs in celeston mohair that beckon to weary travelers. Antique porcelains and collectibles adorn the transitional English breakfront, while large terra cotta planters for seasonal plantings and a cachepot of spring flowers provides a touch of natural relief. Traditional hand-tufted area rugs in greens, celestons, golds and burgundy complement the main Axminster carpeting. Impressionistic art pieces and sculptures personally selected by the hotel's owners complete the lobby's comfortable decor.

In striking contrast to the light and

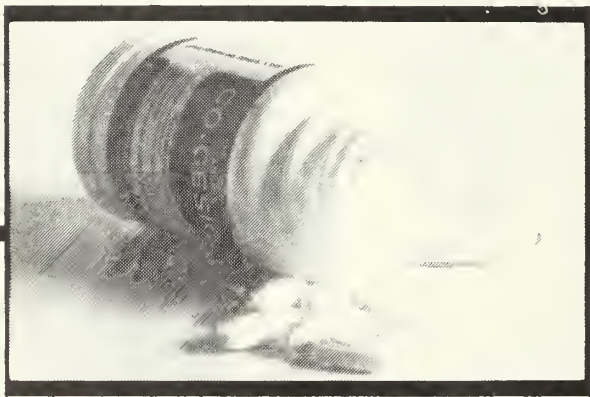
airy feel of the lobby is the rich, dark, burnished effect of the Chancellor's Bar. Black wood paneling, tables of mahogany inlaid in ebony and colors of dark green, burgundy and black create the effect of a "university club." Details such as brass and glass fixtures, mirror panel highlights, sports-related artwork and wood floors in the raised area of the bar sustain this dramatic tone.

The Lincoln Hotel at IUPUI is the newest addition to the Dallas-based Lincoln Hotel Corporation. Headed by President Edward E. Mace, the hotel group owns or operates 10 upscale hotels, including a number of historic properties on which it has carried out award-winning restoration efforts.

For more information regarding reservations, special rates or convention and meeting planning, contact The Lincoln Hotel and University Conference Center at (317) 269-9000.

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Snakeroot Extract

Number 11

February, 1988

PUBLISHED BY THE INDIANA MEDICAL HISTORY MUSEUM AND THE INDIANA HISTORICAL SOCIETY

Museum Receives Large Pharmaceutical Collection



Robert W. Mouser, M.D., of Indianapolis, recently donated his collection of over one thousand pharmaceutical bottles and packaged medications to the Indiana Medical History Museum. Since 1957 Mouser has purchased a wide variety of medical and pharmaceutical artifacts, as well as the stock of over twenty Indiana drugstores. The collection contains a sizable number of fluid extracts and medications produced by ethical drug firms (such as Eli Lilly and Company in Indianapolis and Lloyd Brothers in Cincinnati) and also a large array of late nineteenth-early twentieth-century patent medicines.

The term "patent medicine" originated in England where nostrum makers occasionally sought patents for their products. A government patent required that the proprietor reveal the medication's contents. Many manufacturers, however, preferred keeping the contents of their products a secret because of the inclusion of such dangerous ingredients as mercury, arsenic, or large amounts of alcohol. Yet, the public, who believed the

exaggerated claims of the proprietor, knew nothing of the medication's harmful effects. In the 1700s, English patent medicines such as Anderson's Scots Pills, Bateman's Pectoral Drops, and Hooper's Female Pills became popular in America. Not until after the Revolutionary War did the United States produce its own packaged nostrums. Like their English counterparts, American patent medicine proprietors avoided obtaining government patents. Instead, the manufacturers registered the medication's brand name, a process which gave the producer exclusive right to it.

(continued on Page 2)

Pictured above is a Bliss Native Herbs sales team. (Photograph in the collection of the Indiana Historical Society.) Bliss Native Herbs is one of the many patent medicines in the Mouser collection.

Pharmaceutical Collection

(continued from Page 1)

As the numbers and types of patent medicines proliferated in the nineteenth century, doctors and pharmacists criticized the hucksters who manufactured these preparations. Boston physician Oliver Wendell Holmes (1809-1894) referred to patent medicine proprietors as "toadstool millionaires" who made money by foisting useless and dangerous medications on an unwary public. As early as 1879, some legislators attempted to secure a national law to control the patent medicine industry. These early attempts at federal regulation failed, but in the 1890s and early 1900s, a few states passed food and drug laws. Indiana, upon the urging of Dr. John N. Hurty, the secretary of the State Board of Health, was one of the first states to do so. Hurty's law became a model for other states.

In 1905 the publication in *Collier's* of "The Great American Fraud," a series of articles by journalist Samuel Hopkins Adams, aided the movement to control the patent medicine industry. By revealing the contents of over 260 nostrums, Hopkins drew attention to a problem of national proportions. The same year, two Hoosiers, Harvey Washington Wiley and Senator Albert J. Beveridge, began a concerted effort to enact national food and drug legislation. Wiley, the chief chemist of the United States Department of Agriculture and a former chairman of the Purdue University Chemistry Department, proved to be a staunch proponent of such legislation. With his guidance and the support of Senator Beveridge and others, Congress passed the Pure Food and Drug Law in 1906. It required that patent medicine proprietors not only reveal the presence of dangerous drugs, but also be truthful about the medication's therapeutic value. The 1906 law



Photo by Paul Tracy Wilson

Patent medicines in the Mouser collection.

made no provision for mechanical devices, diet aids, face creams, hair dyes, and cosmetics. Nor did it provide for drug testing. While prohibiting false labeling, the law failed to curb misleading or false advertising in newspapers and magazines. Moreover, fines for violation of the law were low. To compensate for the law's inadequacies, Congress in 1912 passed the Sherley amendment, which declared that any drug was misbranded if the label contained false or fraudulent claims. Under the 1906 law and Sherley amendment, the government prosecuted and convicted a number of proprietors. Yet, these laws by no means ended the manufacture and sale of patent medicines. In many ways the 1906 law merely gave the consumer a false sense of security. From 1906 to the enactment of the second pure food and drug law in 1938, proprietors marketed a wide variety of nostrums and made subtle and devious claims about them. The Mouser collection vividly documents this era of patent medicine production.

During the three decades following the passage of the first pure food and drug law, rheumatism and asthma cures remained popular, although the government convicted a number of proprietors. One such organization — the Munyon Remedy Company — produced homeopathic remedies and claimed to have a "Munyon Pill for every ill." The company had as its trademark a drawing of a man (presumably Munyon himself) with uplifted finger saying "It will cure." The Department of Agriculture declared three products of the company misbranded: Munyon's Asthma Cure, Munyon's Special Liquid Blood Cure, and Munyon's Blood Cure. The asthma preparation purported to cure asthma permanently. Syphilis, scrofula, acne, eczema, and liver spots, according to Munyon advertisements, succumbed to the blood cures. Chemical analysis revealed sugar to be the predominate ingredient of these preparations.

Other asthma remedy proprietors successfully avoided conviction by complying with the letter of the 1906 law rather than its spirit. One such company was

ISSN 0743-6033

Snakeroot Extract is a joint publication of the Indiana Historical Society's Medical History Committee (315 West Ohio Street, Indianapolis, Indiana 46202) and the Indiana Medical History Museum (Old Pathology Building, 3000 West Washington Street, Indianapolis, Indiana 46222). The newsletter is mailed to members of both the committee and the museum.

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Submit all items for publication in the newsletter and inquiries about membership information to the Managing Editor, c/o Indiana Historical Society, 315 West Ohio Street, Indianapolis, Indiana 46202.

Snakeroot Extract derives its name from the white snakeroot plant, a plant that is significant in Indiana medical history. For years, a mysterious disease called milk sickness plagued early Hoosiers. There were many theories as to the disease's cause, but the actual cause remained unknown until the 1920s. At that time, the disease was traced to the white snakeroot plant or, rather, to the consumption of milk from cows that had eaten it. The plant contains the poison tremetol.

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Pharmaceutical Collection

(continued from Page 2)

Himrod's Asthma Company, which noted that their product was not misbranded or adulterated "within the meaning of the Federal Food and Drug Act of June 30th, 1906 as amended." Of course anything outside the purview of the 1906 law was fair game for the proprietors, including the use of a quote by Dr. Oliver Wendell Holmes, ironically one of the greatest foes of the patent medicine industry. During a trip abroad, Holmes suffered asthma attacks, and a friend gave him Himrod's. Holmes noted in this book *One Hundred Days in Europe* (London, 1887): "The best thing in my experience was recommended to me by an old friend in London. It was Himrod's Asthma Powder." The manufacturers printed this part of Holmes's quote on the label, but neglected to note that Holmes went on to say: "It never failed to give at least temporary relief, but nothing enabled me to sleep in my state-room. . . . I assure my kind friends that I have no use for any of them [asthma cures] since I have walked the Boston pavements, drank not the Cochituate, but the Belmont spring water, and breathed the lusty air of my native north-easters." In 1927 the Himrod Manufacturing Company felt safe using only the most favorable portion of the quote; Holmes had been dead for over thirty years!

Nerve pills, kidney pills, liver pills, and laxatives multiplied from 1906 to 1938. Manufacturers claimed their products cured numerous ailments. For example, Dodd's Kidney Pills purported to cure female weakness, backache, indigestion, rheumatism, impure blood, and urinary and bladder trouble. The proprietors of Bliss Native Herbs claimed their product cured not only constipation but made their patients "feel on top of the world again, fit to hook a new job, ask for a raise in pay."

In 1938 Congress passed a much stricter food and drug act. Impetus for such legislation came in the fall of that year when over one hundred deaths resulted from a drug known as Elixir Sulfanilamide. In an effort to manufacture a liquid form of sulfanilamide, a chemist accidentally produced a highly poisonous substance. Since drugs were not tested for safety before marketing, the error went unnoticed until deaths resulted. The public cried out for more effective drug legislation. In response Congress passed the Food, Drug, and Cosmetic Act of 1938, which defined false labeling as erroneous statements made on labels and omission of pertinent facts. The law also required that common names of active ingredients be placed on labels. Finally, no new drugs were to be marketed until adequately tested. In the same session Congress passed the Wheeler Lea Bill, which gave the Federal Trade Commission control over food, drug, and cosmetic advertising.

EDITOR'S NOTE: The Mouser collection is tentatively scheduled for exhibition at the Indiana Historical Society in April, 1988.



Photo by Paul Tracy Wilson

Patent medicines in the Mouser collection.

Museum Launches Capital Campaign

Last November the Indiana Medical History Museum launched a \$750,000 capital campaign to restore the Old Pathology Building and named Malcolm O. Scamahorn, M.D., of Pittsboro, Indiana, as its campaign chairman. At its annual convention, the Indiana State Medical Association's House of Delegates passed a resolution supporting this fund drive. The Old Pathology Building, a registered national landmark, enjoys the distinction of being the oldest surviving pathology laboratory in the United States. The structure was constructed in 1895 as a research facility for Central State Hospital and a teaching facility for area medical schools. The building is listed in both the *Historic American Buildings Survey* and the *National Register of Historic Places*.

Structurally, the building is in excellent shape, but its ninety-year-old heating, electrical, and plumbing systems require modernization. The board will use a large portion of the funds to install air conditioning and a new heating system with humidity control, since excess heat and humidity are extremely damaging to historical items. Building renovation also will include installation of sprinkler systems, smoke detectors, and a new alarm system. Contractors will repaint the interior rooms to replicate the original colors and will duplicate the original wall stenciling. The exterior masonry walls and limestone trim will be cleaned, and a new roof will be installed. The museum's board of directors hopes to meet its fund-raising goal by next summer so renovation of the structure can begin.

Museum Becomes Movie Set

Because of its unique interior, local production companies occasionally use the Indiana Medical History Museum's Old Pathology Building as a backdrop for television commercials. Most of these commercials utilize some aspect of the history of medicine or science to sell their products. Recently, however, Black Sox Productions used the medical library as a set for Hollywood film director John Sayles's latest movie "Eight Men Out." The movie has nothing to do with the history of medicine or science, but instead concerns the 1919 Black Sox scandal and stars Charles Sheen, D. B. Sweeney, Christopher Lloyd, David Strathairn, and John Cusack. In that year, eight Chicago White Sox baseball players accepted bribes to throw the World Series game against the Cincinnati Reds. The next year a federal grand jury indicted eight players for fixing the World Series. Although the jury found the ballplayers innocent, Federal District Judge



Photo by B & L Photographers



Kennesaw Mountain Landis permanently banned all eight from professional baseball.

The movie, based on Eliot Asinof's 1963 best-selling book of the same title, was filmed primarily at Bush Stadium in Indianapolis. However, the medical library of the Old Pathology Building will appear in the film as the study of Alfred Austrian, attorney of White Sox owner Charles Comiskey. The Indiana Medical History Museum also loaned a number of desks, wooden filing cabinets, portraits, lamps, and chairs for other scenes in the movie. For its assistance in the movie's production, the museum is scheduled to receive a credit in the film which is to be released in July.

Left: Cameramen await filming of scene in museum library. Above: Actor David Strathairn outside the Old Pathology Building.

**Indiana Historical Society
Indiana Medical History Committee
315 West Ohio Street
Indianapolis, IN 46202**

ISMA Addresses Problems Associated with Prescription Drug Misuse

RICHARD R. KING II
Executive Director
Indiana State Medical Assn.

IN SEPTEMBER 1986, the Indiana State Medical Association invited more than 20 state agencies and organizations to attend presentations given by the American Medical Association on the possible implementation of the Prescription Abuse Data Synthesis (PADS) Program in Indiana. The PADS model was developed by the AMA as a tool for states to use in addressing prescription drug misuse and diversion. The PADS model uses existing information to identify the nature, extent and complexity of the diversion problem. It inventories the policies, procedures and resources of prescription drug diversion control, and identifies the problem areas within the diversion control system. Action is taken during the implementation of the model by the agencies and organizations involved to resolve those problems that can most readily be corrected by utilizing existing resources, laws and regulations. The decision was made last year to implement the PADS project in Indiana and the Office of the Governor agreed to co-sponsor the project with the ISMA.

In conducting the PADS project in Indiana, data was analyzed which showed that Indiana's per capita consumption of most Schedule II

stimulants was significantly higher than the national average. In fact, according to the data for January 1986 to September 1986, Indiana ranked sixth in the nation for amphetamine consumption and eighth in the nation for consumption of methamphetamines.

Another major finding of the PADS Report was that 80% to 90% of the prescription drug diversion in Indiana occurs at the hospital, practitioner and pharmacy levels.

This past summer, the Final PADS Report was issued to Governor Orr by Shirley Thompson Khalouf, M.D., then president of the ISMA, and John Ring, M.D., vice-chairman of the AMA Board of Trustees. The Final PADS Report outlined several problem areas in Indiana relating to prescription drug abuse and diversion, and also recommended six courses of action to address these problem areas.

One specific recommendation called on the ISMA and the Indiana Association of Osteopathic Physicians to propose regulations to the Indiana Medical Licensing Board to identify the accepted medical use and prescribing of amphetamines in Indiana.

In compliance with this recommendation, the ISMA Board of Trustees voted to propose to the Indiana Medical Licensing Board that a state regulation be promulgated to prohibit a physician from dispensing, prescribing, utilizing, ordering, selling, administering, supplying or giving (herein referred to as prescribing/dispensing) any Schedule II, III or IV amphetamine for purposes of weight loss or control.

The ISMA presented this proposal to the Indiana Medical Licensing Board

at its meeting in October. It was the thinking of the members of the Indiana Medical Licensing Board that the total ban on the prescribing/dispensing of Schedule II, III and IV amphetamines for weight loss may not withstand a legal challenge.

The Indiana Medical Licensing Board believed that it may be more prudent at this time to promulgate a rule which would ban the prescribing/dispensing of Schedule II stimulants for weight loss or control. The proposed rule also would restrict the prescribing/dispensing of Schedule III and IV stimulants for weight loss. (Only a one-time, 30-calendar-day-per-year supply of Schedule III or IV stimulants would be allowed for weight loss, subject to certain conditions).

The proposed regulation was published in the *Indiana Register*, subject to public comment. The final outcome of the proposed rule will be published later in the *Indiana Register*.

Upcoming issues of *INDIANA MEDICINE* will carry articles highlighting the other recommendations from the Final PADS Report, including an interprofessional discussion on prescription drug diversion and abuse, how "doctor shoppers" divert prescription drugs to illegal channels, impaired physicians, and advice on how physicians can prevent being "duped" by illegal prescription drug diverters.

We hope to encourage the support of ISMA members in recognizing the scope and magnitude of the prescription drug abuse problem, and to work together to keep Indiana near the bottom of the list of states with substantial prescription drug diversion and misuse problems.

Questioning the Physician's Broader Responsibilities

LEIF C. BECK, LL.B.
Plymouth Meeting, Pa.

PHYSICIANS ARE uniquely fortunate in one too-often overlooked way. Their professional activity serves the uniformly desirable purpose of helping people. Regardless of what motivating factors led them to choose medicine as a career, their work deals with medical conditions so people can lead healthier, more wholesome and satisfying lives.

Few other professionals can so directly bask in that fact. Attorneys (of which I am one), accountants and advertising agents, for instance, have a more tenuous relation to a uniform socially desirable purpose. Other health professionals play a less pivotal role in the same goal as physicians have. Perhaps only ministers, rabbis and priests can so directly equate their work with the highest goals espoused by our society.

Spiritual Question

Given the special opportunity to serve, though, to what extent do physicians actually seek to serve medicine's basic purposes? In my newsletter, *The Physician's Advisory*, I recently addressed this question under the provocative title: "Are You Doing Enough

to Satisfy Your God?" It put the question in spiritual terms, for all of us must ultimately answer such concerns. But it challenges you to consider your work patterns, and your underlying personal attitudes, as they relate to the community of man as well as to God.

So much good is done by each doctor. The orthopedist repairs his patient's broken bone or, through the wonder of arthroscopy, his torn ligament. The family physician detects her patient's colonic polyps early enough to spare a 45-year-old parent's life from cancer, and the pediatrician handles that parent's children's health problems, big and small, so these kids become healthy adults. The anesthesiologist manages her cases so well that hundreds of in-hospital and ambulatory surgery cases give people years, and decades, of further productive life. And so on for each physician in each specialty and practice setting.

Of course, physicians are for the most part extremely well paid for their work. They are at the top of the income scale, despite their long hours and the burdens upon them. Even though younger doctors worry whether medical practice will be as economically rewarding as in the past, especially in view of medical school debts, they are virtually certain to do at least reasonably well financially.

The "Typical" Physician

As a medical management consultant and advisor to thousands of physicians over some 17 years now, I have developed a fairly good picture of how doctors think and act. There is admittedly enough variation from person-to-person that many people fall outside any generalizations. Nonetheless, some

patterns are so strong that they deserve description.

The "typical," successful private practice physician, an admitted misnomer, works 10, 12 or more hours per day and assumes care of so many patients that his (and increasingly, her) day is hectic from start to finish. His or her commitment to each patient's best care is driven by a combination of an ingrained professional ethic, a business need to provide good service and a fear of malpractice complications. Each patient served, indeed each procedure performed, represents an income flow on a piece-work basis; a procedure compensated at less than the regular fee is considered "lost income."

Within this picture, many doctors accept Medicaid patients, but a great many others refuse those cases. In my experience, however, "successful" doctors generally accept welfare patients only grudgingly. There is a haughtiness in the attitude that the Medicaid or "freebie" patient represents someone who receives something for nothing and then may turn around and bring a malpractice suit if the result is less than perfect. Virtually all physicians have a general policy to reduce or write off the fee of any patient who has presented but truly cannot pay it, although that sort of patient is, if not referred on to the "clinic," hardly sought with any real enthusiasm.

This psyche may be understandable. There is so much to do for patients who, directly and through their insurers, will pay for each separately itemized procedure that helping someone for free is virtually anathema. (One high-income physician wrote me in protest that he "gives away over \$100,000 per year," presumably counting

Copyright © 1987 by the author, who is chairman of the Health Care Group, Meetinghouse Business Center, 140 W. Germantown Pike, Suite 200, Plymouth Meeting, Pa. 19462. He is a medical management consultant and attorney advisor to physicians.

Medicare and Medicaid disallowances as well as write-offs, and challenged whether non-physicians are so generous.)

No Soft Answers

Whether or not you perfectly fit the above-described picture, the difficult question is if those practice patterns are satisfactory within your greater spiritual and human obligations. Is it "enough" to provide your wonderful services through your system geared primarily to those patients who can pay, or whose insurers can pay, your fees? Are God and humanity sufficiently served when you offer your good works only within your own practice's pattern? And are your greatest obligations satisfied when you practice good medicine, live a generally moral life and devote the rest of your attention to your family?

The teachings of virtually all our religions take us past our society's comfort zone and answer "no" to these questions. While not opposing wealth, for instance, the Bible, both Jewish and Christian, demands concern and effort for the poor. And it calls for that concern and effort to be genuine enough to withstand your, and your God's, critical evaluation.*

All of us tend to avoid that critical evaluation; we prevent logic from pursuing its natural course when it affects our built-in priorities. An affluent suburban churchgoer may, for example, give some money and a bit of executive time, but not his actual on-site presence, to a charitable effort. And a physician may take pride in seeing poor patients for no or low fee if they somehow find their way to his office, but not affirmatively reach out and seek those people who really need his skills.

* While the comments are in relation to the Christian and Jewish religions, it is believed that the same concerns are held in the world's other major religions. And even atheists should recognize society's needs as a matter of general personal morality.—LCB

A number of teachings show how our society's systems are subtly but insidiously stacked against the poor.* You need not be a "bleeding heart liberal," I am not, to see how poor people lack access to medical care and other basic needs which would be even minimally acceptable to our own families. Answering that the poor could find jobs and improve their own access

"To What Extent Do Physicians Actually Seek to Serve Medicine's Basic Purposes?"

to such care overlooks two basic flaws: the systems make this virtually impossible, and God demands concern for the less advantaged anyway.

Everyone's Question

Some doctors responded to these points by comparing their good works to those of non-physicians. "Who are you," one physician wrote me, "to chastize doctors when you probably don't do anything for the poor yourself?"

He made a good point. Every person—whether salesman, lawyer, corporate executive, medical management consultant, housewife or physician—faces the same questions. In response to that letter writer, I am heavily involved in an inner city, church-based health center's operations. Other non-physicians I know expand far greater efforts than I do for "worthy projects." And many people are oblivious to the whole issue.

Some of us non-physicians are envious of doctors in this regard. Physicians have the privilege of being able

* See, for instance, "Rich Christians in an Age of Hunger," by Ronald J. Sider, Inter-Varsity Press, Downers Grove, IL, 1984.

to provide direct, "hands on" service to needy people; others' training allows them only to help organize, finance and, at best, manage the efforts. Would that we could operate on a blind woman on a Project Hope third world venture so she can see again, or help an impoverished Indian reservation improve its infant mortality rate.

The physician thus faces the same spiritual question that may puzzle non-doctors, but the physician has a special opportunity to answer it. The "good works" in private medical practice may be "enough" to satisfy his or her social and religious obligations—or they may be insufficient.

What to Do?

Some doctors have answered these concerns head-on. They committed themselves during their training to serve the poor, recognizing that health is a basic need that they can help provide in service to God. These mostly young doctors made this "total commitment" right after residency, accepting a reduced life style before they experienced their peers' affluence.

The executive director of the Christian Community Health Fellowship, located in Philadelphia, reports that the odds of someone leaving normal practice patterns for a "total commitment" are virtually nil. A few doctors have, however, taken half-steps. In Denver, a successful two-doctor suburban practice opened a second office in the inner city. One partner gives 60% of his time to the low-income site and 40% to the affluent office.

In Pennsylvania, two successful family practitioners are expressing their Mennonite faith three days a week in Philadelphia, 75 miles away from their homes and practices. In an extremely underprivileged inner city area, they make house calls, broadly counsel patients and steer them to pastoral help as requested.

Other Approaches

Most of you may be unable to commit so heavily as these doctors. But

there are still many opportunities.

One younger physician wrote in reply to my newsletter challenge. He is still building his specialty practice, barely breaking even, while saddled with debts. Though he feels he must zealously guard his "paying patient" time, he said this:

"However, I am going to try to institute a program through local churches and relief programs whereby my office can see one referred medically indigent patient per day in this coming year. Thus, this could be just under 300 people served at reduced rates or gratis. The tough question to answer is whether even that is enough."

The wonderful thing about this young doctor is that he is going to actively seek out the needy patients. This is a significant difference from staying in one's regular work environment, with its physical and emotional comforts, providing whatever service to whomever comes along.

Perhaps you, too, might consider taking your skills to people who cannot otherwise find you or do not even know your help is available. Maybe the sense of greater obligation leads you

to offer yourself in a role different from the all-consuming one you usually play.

Another physician wrote that he and several like-minded physician friends in their late 40s and early 50s are talking about putting together a medical venture for the poor. They would take themselves to the people, not sit back and wait for the people to find them.

The needs and your opportunities extend throughout the world. Though much can be done in America's ghettos, the abject disadvantages in India, Africa and parts of Central America are even more compelling. Contributing a few weeks or a sabbatical absence to such service agencies as Project Hope or the Luke Society can be extremely helpful. As one doctor who has participated in a number of them wrote:

"Those physicians who do voluntary community service, whether in their own locality or on an international basis, find that their satisfaction with their work and with life increases, their self-esteem increases; and those who involve their families in this work find that their family relationships are nurtured."

Facing the Question

A minister said this about medical doctors:

"The knowledge they have and the talents given them are things that they have been given by God. They owe much to Him and need to return much." Complaints about the medical profession's changed circumstances—including the malpractice climate, government regulation and big business' influence—fail to change this basic, underlying reality.

Just as everyone else, each physician should face the question. Is he or she doing "enough" to satisfy the spiritual concerns that, though generally submerged from critical thought, must present themselves occasionally during one's life? Physicians have the privilege, and the obligation, to answer it more directly and with greater potential satisfaction than other people.

What about you? Are you willing to ask if you are really conducting your life, and your medical talent, as your God would expect? And if you ask, how will you answer the question and act upon it?

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FUTURE FILE

CONTINUED FROM PAGE 118

Child Care

The 23rd Annual Indiana Multidisciplinary Child Care Conference will be held May 18-19 at Union Station Holiday Inn in downtown Indianapolis.

Subjects to be discussed will include management of asthma, office laboratory testing, sports medicine, office allergy and immunology, pediatric infectious disease, and nutrition, fluid and electrolytes.

For more information contact: Dr. Richard Schreiner, Indiana University School of Medicine, Riley Hospital for Children, One Children's Square, Indianapolis 46223.

Medicolegal Issues

International Conferences will present a cruise/seminar on risk management and comparative medicolegal issues May 13 through June 3 during a study tour of Hong Kong, China, and Japan.

Three days will be spent in Hong Kong, followed by a study tour in China and Japan on the Royal Viking Star. The meeting will conclude in Tokyo during a three-day visit. Medical meetings will be held in Hong Kong, Shanghai, Beijing, Dalian, Nagasaki and Tokyo. The seminar is approved for 28 CME Category 1 hours and 28 AAFP prescribed credits.

For more information contact: International Conferences, Suite C, 189 Lodge Ave., Huntington Station, N.Y. 11746—(800) 521-0076.

General Surgery

The University of Texas Health Science Center of Dallas is sponsoring "Current Topics in General Surgery," to be conducted April 5-9 at the Sheraton Royal Waikoloa Hotel in Kona, Hawaii.

Reservations are needed before Feb. 26. The meeting fee is \$525 before March 1, \$600 thereafter.

For registration and hotel details, write to Shield International Meetings, KLR, 1500 Broadway, 13th Floor, New York, N.Y. 10036.

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Contraindications: Known hypersensitivity to the drug.

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically. Due to isolated reports of exacerbation, use with caution in patients with porphyria.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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California Court Action

Physicians Bear Responsibility in Utilization Review

Case History: Wickline v. State of California, 228 Cal. Rptr. 661 (Cal. App. 2 Dist. 1986).

A GENERAL FAMILY practice physician was treating a woman in her mid-40s for problems associated with her back and legs. When the woman failed to respond to the prescribed physical therapy, the physician admitted the woman to the hospital and asked a specialist in peripheral vascular surgery to do a consultation examination.

The vascular surgeon diagnosed the woman's condition as Leriche's Syndrome, arteriosclerosis obliterans with occlusion of the abdominal aorta. The occlusion occurred just above the point where the aorta divides into the two common iliac arteries. The surgeon concluded that the woman's condition was so far advanced that it was necessary to remove a part of the artery and insert a synthetic graft.

The woman agreed to the procedure and the family practice physician submitted the appropriate forms to the state's medical assistance program. The surgical procedure and ten days of hospitalization were authorized.

The surgical procedure was performed on January 7. Later that same day, the surgeon was notified that the woman was experiencing circulatory problems in her right leg. He concluded that a clot had formed in the graft. The woman was taken back to surgery where her right groin was reopened, the clot removed and the graft resewn.

The woman continued to experience pain, some spasms in the vessels in the lower leg and some hallucinating episodes. Five days following the original surgery, the vascular surgeon performed a lumbar sympathectomy on the woman.

The vascular surgeon was assisted in all three surgeries by the hospital's chief of surgery. The woman's family practice physician was present for the initial graft surgery and the lumbar sympathectomy.

The woman was scheduled for discharge from the hospital four days after the lumbar sympathectomy. On that day, the vascular surgeon concluded that it was medically necessary for the woman to remain in the hospital an additional eight days. The surgeon's principal reason for extending the hospitalization was to observe the woman's progress and have hospital staff immediately available if infection, clotting or another emergency occurred. The other two physicians concurred with his opinion.

To secure extension of the hospital stay, the hospital submitted a "Request for Extension of Stay in Hospital" form, as required, to the medical assistance program. The request form included information on the woman's diagnosis, significant history, clinical status and treatment plan provided by the surgeon. The request was reviewed by the on-site nurse representing medical assistance. She decided that nothing in the woman's case warranted the additional eight days of hospitalization, so she conferred by telephone with the physician-consultant at the medical assistance office. The physician rejected the surgeon's request to ex-

tend the woman's hospitalization by eight days but approved an extension of four days.

Over her protests, the woman was discharged from the hospital on the fourth day. The chief of surgery met with her husband to explain her home care which included antibiotic powder for the groin incision, medication, warm water baths and bed rest.

During the first three days at home, the woman experienced pain in her right leg and the leg appeared to lose color. As the pain worsened and the leg took on a grayish color, the woman had her husband call the chief of surgery. He prescribed extra pain medicine. The pain was not relieved by the medication and the leg began to look bluish. The woman's husband again called the chief of surgery and he ordered the woman admitted to the hospital, nine days following her discharge. The woman was admitted through the emergency department. The physician found an open wound in the right groin area, a secondary infection in the femoral incision on the right leg, a mottled foot and the right leg felt cooler than the left leg.

The surgeon examined the woman the next day. He was unable to determine when the infection and the clotting in the right leg had developed. Since the presence of the infection made surgery too risky, the surgeon prescribed anticoagulants, antibiotics, strict bed rest, pain medication and warm water whirlpool baths. This course of treatment proved unsuccessful and eight days later the surgeon amputated the woman's leg below the knee. The amputation did not heal and nine days later another

amputation was performed above the knee.

The woman brought action against the state medical assistance program alleging that the premature discharge from the hospital resulted in the amputation of her leg. A jury ruled in favor of the woman.

The state medical assistance program appealed the decision. In their appeal, medical assistance contended that the decision to discharge the woman was made by her three physicians, that the decision was based upon prevailing standards of practice and justified by her condition at the time of discharge.

In reversing the decision of the jury, the California Court of Appeal addressed the issue of who bears responsibility for allowing a patient to be discharged from the hospital.

The court said it was the physician's

responsibility to determine if acute care hospitalization was required and for what length of time. The decision to discharge, the court said, is the responsibility of the patient's treating physician. If it was in the patient's best interest that she remain in the hospital for an additional four days beyond the time period originally authorized, the physician should have made some effort to keep the patient there. The determination of the need for acute care should be made in accordance with the usual standards of medical practice in the community. And, the treating physicians agreed that the surgeon's medical decision to discharge the woman met the standard of care applicable at the time.

The court added, "While we recognize, realistically, that cost consciousness has become a permanent feature of the health care system, it is

essential that cost limitation programs not be permitted to corrupt medical judgment."

"The physician who complies without protest with the limitations imposed by a third-party payer, when the physician's medical judgment dictates otherwise, cannot avoid his ultimate responsibility for his patient's care," the court said. "Medical assistance did not override the medical judgment of the woman's treating physicians at the time of her discharge. It was given no opportunity to do so. Therefore, there can be no viable cause of action against it for the consequences of that discharge decision."

Editor's Note: The California Supreme Court has refused to hear an appeal of this case. The decision of the California Court of Appeal stands.

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Teachers as Role Models

RICHARD J. REITEMEIER, M.D.
Mayo Clinic

I WANT TO THANK Walter Daly for inviting me to participate in your faculty conference. As an outsider, I have none of the background of shared experiences you possess in the teaching of students at Indiana, but I was happy to accept Dean Daly's invitation since, like each of you, I am concerned and interested in the process and outcome of medical education in these changing and troubled times.

I know for most of you it has been a long day. We have enjoyed a fine dinner, and such a setting places the message of any after dinner speaker at grave risk. I will do my best to avoid presenting to you a laundry list of time-worn platitudes—rather, I wish to share what I have gleaned from 40 years of practice, of teaching, of reading, of observation, and lately of reflection. For those who might be interested in references, I will quote the source of each as I go along.

One reason that it is critically important for medical teachers to be good role models and to develop effective techniques, defensible attitudes and practical applications in this area, is that our students are soon to join the ranks of our profession and the public image of that profession is changing and becoming negative. But we have opportunities to make constructive impacts on the direction of that change

Dr. Reitemeier, Professor of Medicine, Mayo School of Medicine, presented this address in the Fall of 1986 during a faculty conference at the Indiana University School of Medicine, Indianapolis.

in public opinion by how well we teach and prepare our students.

The writer, Norman Cousins, has been a friend and critic of medicine for the last decade and, in the November 28, 1985 issue of the *New England Journal of Medicine*, he reports the results of an informal survey he conducted by sending a questionnaire to 1,000 households of a California community on the general subject of patient-physician relationships. He was stimulated to do this by his observa-

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tions as he tried to teach medical students at UCLA on the subject of medical humanities. He noted that many of the students tended to regard the area of patient-physician relationships as soft. They seemed reluctant to attach appropriate importance to the physician's communication skills, to medical ethics, or to the circumstances of the patient's life.

Cousins had 563 responses to his

questionnaire and noted from the responses that 85% had either changed physicians in the last five years or were thinking of changing for reasons other than relocation, the physician's retirement or death, etc. Only 25% who were changing cited incompetence on the part of the physician as the reason for doing so. Competence seemed taken for granted. The bulk of the respondents changed because of a wide variety of reasons having to do with the style or personality of the physician, including poor communication skills, an atmosphere of clutter or disorganization, inability of the physician to inspire confidence, inability to arouse the patient's hopes, and personal habits or characteristics.

If defects were identified by the public in the professional activities of these physicians, how can current students be better prepared or protected? How do we learn the right kinds of attributes? I subscribe to the thesis that, in part, we learn by watching others, particularly while we are students. We adopt that part of a teacher's style or technique we like and with which we feel comfortable. We also learn such attributes by doing, by trial and error. So it is a mixture; but whoever of our teachers become our role models are very important to the development of these attributes.

More recent than Cousins' report is an article from the *Minneapolis Tribune*, the morning newspaper I read, for October 9, 1986. One of the editorial staff, Anthony Morley, reviewed some of the changes in the health care system in our country and raised questions regarding the impact of such changes on the quality of care received by the patients. He is worried, but optimistic, and the basis of his optimism is an attitude strongly held by the public that no matter what happens

to the systems of health care, whatever the restrictions, rules, limitations, etc., the doctor will nevertheless always place the patients' best interests first, and insure that they will be safeguarded. Morley wrote, "The commitment to give unstinting care to anyone ill or injured is deeply ingrained in the medical professions. It reflects a value highly held and honored by most Americans."

He goes on to reassure the reader that such will continue despite the impact of cost-consciousness in health expenditures, the arrival of HMOs, and so on. "There is no inherent conflict between efficiency and caring in the practice of medicine or the provision of health care in modern mass society, but there is no automatic compatibility either. Medical professionals and public policy leaders are equally obligated to see that the values of unstinting service and responsible stewardship of limited resources are jointly honored." I am not sure how effectively the public policy leaders will contribute their share to achieving that goal. I am sure our profession will be required to do so.

Cousins' questionnaire and Morley's editorial are only two small samples of public opinion of our profession. For me, much greater insight was provided by two remarkable women scholars of American medicine, now both at the University of Pennsylvania. Rosemary Stevens, the medical historian, and Rene Fox, a sociologist. In a variety of forums they have reflected on the changing scene in health care from a very broad perspective of society itself, particularly those changes that have occurred since World War II and which constitute an actual and radical revolution. They point out that society has begun to raise questions and doubts about issues that formerly were accepted as fundamental ideals or truths; for example, changes in attitudes toward life, death, old age, when life as a person begins, and what an acceptable quality of life means. A few examples highlight some of these current topics of debate: abortion, euthanasia, brain death, and the right to die.

These observers identify the contributions the advances in biology, including molecular biology, have made in shaping some of this new public attitude. Many now look at much of human behavior as an expression of biology and this represents a conceptual shift in the public's perception of life, person, human and so on. Each new scientific advance impacts on this trend

*"I Have Never Ceased
To Be Astonished at the
Great Good That Comes
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for the Dignity of That
Person . . ."*

and solidifies for some the thought that science and biology can explain all of human behavior. How will such changing attitudes influence our Code of Ethics, our assumed responsibilities and accountability?

The ethical framework we have used in the past is insufficient for today's and tomorrow's world—a world of increasing complexity. Now, we strive to expand and improve that framework and identify ethical principles that can and do relate to these complex clinical situations we now encounter and will continue to encounter in the future. Our seemingly insatiable desire to transplant every possible organ, or use artificial parts, insures that we will continue to face situations with ethical dimensions and be forced to resolve them. Society continues to agonize over these and other issues, propelled

by man's innate desire to discover what is the truth, which is the right way.

Medicine is a special focus of all this change—in great part, due to the extraordinary nature of our work which permits us to be involved with the most elemental aspects of the human condition. Yet the public has come to expect illness to be prevented, life to be prolonged, and everyone to achieve a higher quality of life, especially the aged. All of these are rising expectations. Note how now the terrible tragedy of AIDS has shattered the public's former sense of security that all infectious diseases can be prevented or treated.

There is less tolerance for uncertainty, less sympathy with limitations, and less willingness to accept the recognized hazards accompanying much in medical treatment. The public tends to react with indignation to a bad outcome, and to look for who is responsible and who is accountable. We love and seek our heroes. We actively search for solutions, but we also look for villains. This translated into the individual patient asking, "Why am I ill?", "Why am I not getting better?", "Did something go wrong?", "Who is to blame?"

Some of this attitude explains the current increase in malpractice actions; and, because of these changes, the essential element of trust, which has been a bond between the physician and patient, is being eroded—but, in both directions. Physicians are becoming wary and cautious, and the environment of trust, so essential to a therapeutically good outcome, is at risk.

In the future, there will be increased questioning about the value and efficacy of medicine even while belief in technology continues and even though the public sees medical advances as exciting and desirable. This observation should propel us, as health care providers, to give the public much more information about medicine, about the specific risks of selected procedures, about outcomes: the potential for success, the cost and the risks involved. We must learn and practice effective

communication.

But, far and away, our most critical need is to understand clearly what the public expects of us. Foremost is the application of what is best in science and technology. This is primary and is the underpinning of all else expected of us. Let me repeat: *the application of what is best in science and technology.*

Yet, the public expects far more than this. Norman Cousins, in the *JAMA*, August 6, 1982, speaks out for his fellow laymen: "There are qualities beyond pure medical competence that patients need and look for in their physicians. They want reassurance. They want to be looked after and not just looked over. They want to be listened to. They want to feel that it makes a difference to the physician, a very big difference whether they live or die. They want to feel they are in the physician's thoughts."

Cousins wrote this four years ago and concluded with, "I pray that, even as he attaches the highest value to his science, the physician will never forget that it works best when combined with his art, and, indeed that the art is what is most enduring in the profession. For, ultimately, it is the physician's respect for the human soul that determines the worth of his science."

Yet the patient in our office, in a clinic, or in a hospital bed, afflicted by a disease process we can recognize, define and treat, is also one member of our modern society; and the society itself has been diagnosed as afflicted, as ill, as diseased—but with what pathologic process?

May I recommend an article in the June 1986 issue of *Harper's Magazine* by Walker Percy entitled "The Diagnostic Novel." In that article, Percy calls attention to the stories published by the 19th century Russian doctor Chekhov. He was a physician and a writer of fiction who gave up medicine for writing, as did Walker Percy, who has written a number of novels (two you may recognize, the *Moviegoer* and *The Last Gentleman*). Percy notes how Chekhov in his writings exhibits a

diagnostic approach to the ills of his modern world, and Percy professes that 100 years later this technique is still viable and that literature is a proper tool for identifying the ills of our society and exploring the options available to afflicted modern man—the same man we have as our patient. In deference to time and to your good patience, I must abbreviate Percy's thoughtful analysis and relate his stark conclusions.

What is the affliction of society? Percy's answer is that it is what

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To Be Concerned About
and Interested in the
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Patients and Students . . ."*

happens when one feels in the deepest sense possible that something has gone wrong with one's very self. He identifies modern man as a castaway who does not know who he is, where he came from, or what to do. That was not our society before the days of World War II. We had, or we thought we had, a secure, solid value system that permeated society and espoused the ideals that reflected a consensus of society: justice, honesty, virtue, reliability. We had our institutions: the churches, the courts, the schools, the family, our legislative bodies. Proper behavior was important and it was defined: hard work paid off and opportunities of the right kinds existed. We

felt secure, but think of what has happened since we were that young!

Percy's definition of modern man— isolated, alone, experiencing the common complaint of the age: the loss of meaning, the purposelessness, the loss of identity, of values. We are in a world that has been transformed by technology both for good and for evil, the evil being the very real ugliness of much of the transformation and the very real depersonalization of many people living in such a world—and with this a subtle yet more radical transformation of the very consciousness of Western man: man beginning to worship or idolize technology and depend on it to fix everything that goes wrong and being willing to pay for this new security with a loss of his own sovereignty. This tragic misunderstanding of science and technology is the lesion whose effects we must identify in our patient and teach our students to identify.

But to do this we have to know ourselves. We have to identify within ourselves our own belief of where the physician fits in our society and his proper role. We each have our own value system, our convictions of what actions are right and proper and what actions are not. Albert Jonson, the medical ethicist at the University of California in San Francisco, in the *New England Journal of Medicine* for June 23, 1983 carefully develops the basis of the dual responses of a physician— first, that of self-satisfaction and self-support and which, of course, is self-interest; and second, the response of altruism, the response to the needs of others. This paradox we all face and must live between these principles in institutions that enshrine both of them. The tension is constant.

Others, outside of medicine, now take issue with our time-honored role that the editor Morley wrote about in my newspaper one week ago, that we always place the patient's interest first. This has developed as a debate between two articulate spokesmen for each camp: Arnold Relman, the editor

of the *New England Journal of Medicine*, and Uwe Reinhardt, an economist with a delightful wit; and the debate has been published in the summer issue of this year's *Journal of Health Affairs*, a publication of the Project HOPE.

Relman's view is that the physician is to place the interest of the patient above his own and always do what is in the patient's best interest to the best of his ability. Reinhardt asserts that physicians are no different from other purveyors of goods and services and that no more should be expected of them. His comments have a sting as he identifies defects in our present health system which has largely been constructed on the pretense that altruism does in fact exist. Relman refuses to blanket an entire profession with the moral hypocrisy of some physicians and contends that there is something unique about the physician-patient relationship and that society has recognized this special relation by surrounding it with a network of legal and ethical constraints. If you can, read this debate—it is a close call as to who won.

Relman is in step with Sir William Osler in an address Osler gave in 1903. It is found in the *Johns Hopkins Hospital Bulletin* of 1904, Volume 15, and it states "More than any other, the practitioner of medicine may illustrate the second great lesson, that we are here not to get all we can out of life for ourselves, but to try to make the lives of others happier. This is the essence of the oft-repeated admonition of Christ: 'He that findeth his life shall lose it, and he that loseth his life for my sake shall find it'. Osler continues: "... on which hard saying, if the children of this generation would lay hold, there would be less misery and discontent in the world. It is not possible for anyone to have better opportunities to live this lesson than you will enjoy. The practice of medicine is an art, not a trade; a calling, not a business; a calling in which your heart will be exercised equally with your head."

Certainly that has been the ideal to

which we thought we were adhering, but we know we have slipped often and badly. Yet the chance to renew that purpose is ever present for whenever we are in the presence of students, we have the opportunity again to describe our "Camelot." We have to understand

*"If We Want Our Students
To Be Compassionate
Physicians, We Must
Demonstrate Compassion
for the Patients and
Do This Freely and
Sincerely . . ."*

what Francis Peabody cautioned in his famous address, "The Care of the Patient," which was first published in the *Journal of the AMA* of March 19, 1927: "The essence of the practice of medicine is that it is an intensely personal matter—the treatment of a disease may be entirely impersonal; the care of a patient must be completely personal. The significance of the intimate personal relationship between physician and patient cannot be too strongly emphasized for in an extraordinarily large number of cases both diagnosis and treatment are directly dependent on it . . ." This address was reprinted in the *JAMA* of August 10, 1984.

What then have I observed in a lifetime of practice that relates to role modeling? It is self-evident that if one is to demonstrate something, then one must perform. In recent years house officers tend to block our direct access to carrying out the function of caring personally for the patient. This, in part, may be due to the published *Special Requirements* of some of the Residency

Review Committees who insist on so much patient care responsibility for the residents. I simply have said to the residents that we all presume I know something about this discipline or specialty they do not know and I believe I *can* offer them an example or a demonstration they can evaluate for themselves as to its worth. So I have taken over the care of *some* patients for that purpose.

I believe it to be essential in medical education, for every teacher to directly and quietly observe the residents or students in their obtaining a history from a patient. In my opinion this has absolute primacy, for in that discourse, we can learn so much about the patient, his special environment of home, family, work, habits, avocations, stresses, problems, fears and anxieties. Here is found the information allowing us to see the person of the patient. A disease may exist within that person, but the person is the more important and that person has great value. I have never ceased to be astonished at the great good that comes from expressing in our speech and actions to the patient our respect for the dignity of that person.

The patient should never be referred to at any place or time as that case of cirrhosis, or this white 68-year-old female, etc. The student must see me act out my conviction of the dignity of that patient: Mr. Smith who has cirrhosis or Mrs. Brown, a retired school teacher, now living alone in her apartment at age 68, etc. This respect for the dignity of the patient is extended to respect for the dignity of the residents and the students and for all colleagues and personnel.

We never need be stiff or stuffy, but we should not be so familiar as to denigrate the professionalism we espouse. Nothing protects achievement of desired function so much as does the constancy of a professional environment. It is important while we are with our students to avoid criticism of the persons of our peers or of students; we can and sometimes must disagree, but

with their plans or ideas, not demeaning them as individuals. As a graduate at my institution, I shall never forget the elegant courtesy extended to me by so many of the senior staff consultants and this persisted all through my training at Mayo. That attitude stimulated all of us who were just beginning in the profession to work all the harder so as to justify that courtesy. What I experienced was the extension of each senior man's very self, in acts of kindness and thoughtfulness, that gave a new dimension to their dignity and to ours — professionalism was enhanced.

We have other opportunities in role modeling to demonstrate effective communication to the patient by choosing terms and using examples and analogies that make clear our thoughts and advice. Then to observe our students as they do the same with other patients and offer constructive criticism of their efforts as they practice what will be a key element in their future independent care of patients.

At times this seems to threaten some students. Yet often a simple reference to the comparability of what we as teachers do for them, with their seeking the help and advice from a golf or tennis professional when their game is in trouble. I usually conclude by asking a resident if that example is really different from when we try to teach at the bedside, and I have yet to find this example to fail to satisfy a doubt or remove the imagined threat.

That may work well for our role in constructively criticizing the performance of a student, but our art of medicine is complex and is, for most of us who are older, based on the experiences we had as youths, even children, in a different society. Do the present students have a different outlook, a different set of values, different goals? The role we demonstrate must apply to the real world around us. To do this, we must understand that

world as much as we can. I believe we have a responsibility to be concerned about and interested in the social, economic and environmental forces in the community at large, for such forces affect our patients and our students. We must know and understand the present day home, the family, workplace, the street and the school. In a word: We must be aware!

And further, to be still more effective in our role modeling and to prepare our students as fully trained professionals, we as faculty, as their teachers, must know ourselves. If we want our students to be compassionate physicians, we must demonstrate compassion for the patients and to do this freely and sincerely. We have to care about people. We have to accept, to welcome the sick, the disabled, the disturbed. We and they are part of the same society and share the same needs. Can we do this? Can we really care that much? The importance of our true attitude cannot be overstated, as we cannot pretend in this area, for our actions will then be transparent to others. Again, in a word: We must know ourselves.

The touch of a physician can be so important. In an article entitled, "Our Art, Our Heritage," Eugene Vickery, a practitioner in Lena, Illinois, in the *Journal of the AMA* of August 19, 1983, clearly describes the importance of the physician's strength of personality. I agree and let me close with this illustration.

As a graduate student working in the hospital on the service of gastroenterology, we often had a large number of patients afflicted with chronic ulcerative colitis admitted about the time it would be known that one of our senior staff, Dr. Arnold Borgen, would come on the hospital service and care for such patients. His reputation was national and patients eagerly sought his care. These patients, at that time in history, were

very much like the lepers of ancient times. There was very little that could be done by most physicians for patients with ulcerative colitis and often the disease was expressed in very severe terms with high fevers, severe abdominal pain, vomiting, cachexia and a terrible raging bloody diarrhea. Since so little could be done for them, it was somewhat of a relief, I believe, for doctors in other communities to send their patients to Dr. Borgen. And the patients sensed the frustration of their own physicians; they felt like outcasts.

We would present to Dr. Borgen the history and the physical findings of such a patient the morning after the patient had been admitted to the hospital and then this "miracle" would occur. Dr. Borgen was a man of relatively short stature, but he looked like a giant as he would stride across the patient's room to the bedside, would firmly grasp the patient's hand and looking the patient straight in the eye would say, "We are glad you have come here and we are going to help you get better." What a message that was for the patients! This was the first word of welcome that they had received since they were ill. By those words, Dr. Borgen welcomed the patients back into society; he accepted the patients as they were and he instilled hope. The outcast leper was embraced.

I don't believe Dr. Borgen personally realized exactly what effect he was causing, but we observed that almost the next day the fever began to abate, the diarrhea was less and the patient for the first time began to have a spark in the eye. Hope had been instilled. I was taught by Dr. Borgen's actions how much it means to patients to have the physician demonstrate his care and his concern. Students pick this up. Students some day become independent professionals and the collective actions of all us professionals constitute the basis for society's judgment of us.

CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Preop/Postop Radiation Therapy

CONTINUED FROM PAGES 123-126

1. Preoperative irradiation has been shown to result in sterilization of tumor and lymph nodes. This has resulted in a consistent and dramatic improvement in survival in patients with operable lung cancer.
a. True
b. False
2. Preoperative irradiation may be useful in selective clinically, marginally resectable lung cancer in which distant metastases have not been demonstrated.
a. True
b. False
3. Superior sulcus tumors represent a special case in which preoperative irradiation and extended en bloc resection has resulted in about one-third of patients surviving five years.
a. True
b. False
4. Irradiation alone has been reported to result in a survival over 20% in superior sulcus tumors at five years.
a. True
b. False
5. Preoperative irradiation in theory would be expected to increase resectability of tumor, control lymph node metastases that may not be resectable, irradiate subclinical extension of tumor out of the margins of resection, decrease the incidence of post surgical recurrence and possibly decrease distant dissemination of viable malignant cells.
a. True
b. False
6. Attempts to improve local treatment for lung cancer must be tempered with the realization of propensity of lung cancer to metastasize distally.
a. True
b. False
7. Postoperative irradiation given to patients with completely resected lung cancer without nodal involvement would be expected to result in a dramatic improvement in overall survival.
a. True
b. False
8. Postoperative irradiation may possibly improve survival when given to patients who are found to have involved hilar or mediastinal lymph nodes at the time of surgery.
a. True
b. False
9. Non-selective application of pre- or postoperative irradiation could result in a decrease in patient survival.
a. True
b. False
10. Patients with T2 primary lung tumors that were completely resected and had no lymph node involvement have been reported to demonstrate improved survival following postoperative irradiation.
a. True
b. False

JANUARY CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the January 1988 issue: "Polymyalgia Rheumatica and Giant Cell Arteritis," by Kent Par-tain, M.D., *et al.*

1. b
2. d
3. d
4. a
5. c
6. a
7. a
8. d
9. c
10. b

Answer sheet for Quiz: (Preop/Postop Radiation Therapy)

- | | |
|--------|---------|
| 1. a b | 6. a b |
| 2. a b | 7. a b |
| 3. a b | 8. a b |
| 4. a b | 9. a b |
| 5. a b | 10. a b |

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before Mar. 10, 1988 to the address appearing at the top of this page.

BOOK REVIEWS

Plenum Publishing has released *Premenstrual Syndrome*. The legal, biomedical, social and ethical aspects of PMS are discussed and debated in the new book edited by Benson E. Ginsburg and Bonnie Frank Carter. In it, leading authorities and practitioners in law, biomedicine, psychiatry, clinical medicine and ethics define the syndrome, evaluate the latest medical and clinical findings and treatment methods, compare cross-cultural views of the menstrual cycle, and raise some important questions. 452 pages, illustrated, \$55.

Jossey-Bass Inc., Publishers announces release of *Understanding America's Drinking Problem*, a book written by Don Cahalan, a University of California researcher. He points out that, after 20 years of vigorous efforts to control alcohol drinking, the estimated economic loss is now about \$100 billion a year. Also, "alcohol ads comprise two-thirds of all national advertising in college newspapers." The Jossey-Bass address is 433 California St., San Francisco 94194-9990.

THE GOOD NEWS ABOUT DEPRESSION, by Mark S. Gold, M.D. Copyright 1986, Dillard Books, Random House, New York. 328 pages, hardcover, \$18.95. (Reviewed by I.E. Michael, M.D., Indianapolis)

The author, Dr. Mark S. Gold, is the founder of a new specialty—Biopsychiatry. His very terse definition of this new phase of psychiatry is "Medical Psychiatry."

Dr. Gold cites many examples of patients having depression, secondary to glandular disorders, malignancies, drug reactions, and other organic illnesses. Of course, these patients did not respond to the usual modes of therapy for depression. He stresses the importance of complete medical evaluations, including a detailed family history, to discover hidden organic illnesses and genetic disorders.

Part II of this treatise, covering some 100 pages, deals primarily with

organic illnesses and their relationship to the patient's depression.

Part III is devoted to the feelings of depression and their relationship to genetic and medical disorders.

Part IV is an excellent discussion of the modern-day treatment for depression, and Part V describes the peculiarities of depression in the elderly, in women, and in children.

This treatise is presented in a very easy style and is an excellent review of numerous organic diseases and their relationship to depression. This book is highly recommended for all medical students, house officers, and physicians in primary care medicine. It also would be valuable reading for ancillary services, including nurses, social workers, physical therapists, and families of patients who are interested in the care of their relatives suffering from this very uncomfortable illness.

AIDS: WHAT IS NOW KNOWN, by Peter A. Selwyn. Copyright 1986, HP Publishing Company. 72 pages with illustrations, \$9.75. (Reviewed by Scott C. Bruins, M.D., Indianapolis)

This publication gives an overview of the Acquired Immunodeficiency Syndrome by a keenly observant physician in the midst of the maelstrom in New York City. It is divided into sections that were originally four separate articles in *Hospital Practice*. The extensive use of multicolor graphs, charts and illustrations allows the author to present complicated material to which the reader can quickly refer to again as needed.

The first section deals with the unfolding of the epidemic, the relevant immunology and the viral pathogenesis. This is a good introduction for medical students and physicians who have not dealt with these subjects recently.

The second section describes the epidemiology of the infection and disease as we know it today. This is a rather in-depth description of the epidemic in the USA and a comparison to the epidemiology in Europe and

Africa. There is a lucid explanation of the HIV (HTLV III) serologic testing, including the test methodology and interpretation of the results depending on the population tested.

The third section deals with the clinical aspects of the disease in a balanced manner as only a physician who is in the midst of the epidemic can. The classification schemes and the major infectious problems are both discussed and summarized in charts. The less common aspects are mentioned briefly.

The last section deals with the response of the patient, of medicine and of society to the epidemic. The author discusses the prospects for prevention by vaccines and treatment with drugs. He sees behavior changes induced by education as the major effective medical response.

The second and the third sections will be helpful for the physician dealing with an occasional AIDS patient. The booklet as a whole is a very appropriate introduction for all medical students.

Facilitating Treatment Adherence is a new publication from Plenum Publishing. Written by Dr. Donald Meichenbaum and Dr. Dennis Turk, the book offers practical clinical advice for improving patient compliance. They say research indicates that patients are likely to forget half of what their doctors say to them as soon as they leave the office. A variety of procedures are available to enhance compliance. 310 pages, illustrated, \$29.50.

Plenum Publishing's new book, *When Doctors Get Sick*, edited by Dr. Harvey Mandell and Dr. Howard Spiro, explains why and by what process doctors receive less medical attention than anybody else. Spiro says: "When the sick doctor finally looks for help, the doctor taking care of him or her finds no easy task." Fifty doctors and medical students wrote their own case histories of serious illnesses ranging from alcoholism and severe depression to cardiovascular diseases, cancer and AIDS. 484 pages, \$25.

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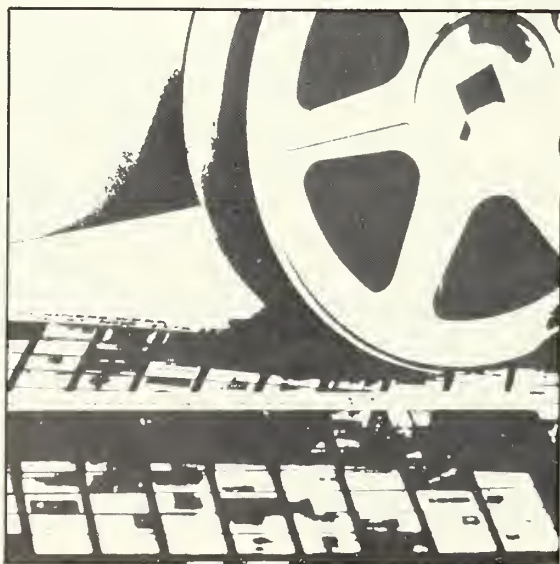
Anne Throop, Indianapolis
ISMA Auxiliary President 1987-88

ISMA Auxiliary President Anne Throop appointed to the 1987-88 Long Range Planning Committee Mary Jo Gutwein (Mrs. Gilbert), Tippecanoe County; Karen Lewis (Mrs. James), Wayne Union County; Ellaine Cox

Members of the ISMA Auxiliary Board were asked to submit their ideas and share their expertise on auxiliary long range planning with the committee. President Anne Throop wrote to each county president and president-elect in October requesting their thoughts and suggestions for the future direction of the auxiliary. President-Elect Ann Wrenn compiled information from the evaluation sheets written by county officers and chairmen who attended the Fall Mini Leadership Confluences held in the

Historically, this committee meets once a year. By request of President Anne Throop, the 1987-88 Long Range Planning Committee met in October and December of 1987.—Muriel Osborne (Mrs. John)

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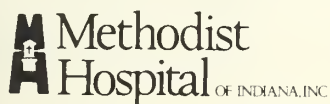
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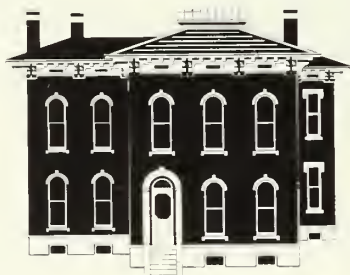
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Generic Name:
Dosage Forms:

Category:
Brand Name:
Generic Name:

Dosage Forms:

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Kenacort, Squibb
Triamcinolone
Tablets, Syrup,
Injection

APRESOLINE

Antihypertensive
Apresoline, Ciba
Hydralazine, Ciba

Tablets, Injection

TRIAMINICOL

Cough preparation
Triaminicol, Dorsey
(combination drug)
Tablets

APRESAZIDE

Antihypertensive
Apresazide, Ciba
Hydrochlorothiazide-
Hydralazine combina-
tion
Capsules

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ADVANCES IN BONE MARROW TRANSPLANTATION, April 28 & 29. The Leukemia Society of America, Indiana Chapter is one of 57 chapters which comprise the Leukemia Society of America. Its purpose is to seek the cause and eventual cure of leukemia and its allied diseases—Hodgkin's, the lymphomas and multiple myeloma.

Bone marrow transplantation is increasingly being utilized in the treatment of hematologic, immunologic, and oncologic disorders. This course is intended for those who provide care for bone marrow transplant patients and their families. With the options for bone marrow transplantation vastly expanding, the clinical and psychosocial management of these patients becomes increasingly complex for health care practitioners.

This conference is divided into two programs, of one day each, with emphasis on the new advances in the clinical and research aspects of bone marrow transplantation, and on concepts related to the psychosocial care of patients and families. It will provide a forum for the multidisciplinary care team to share, translate and discuss current trends and future developments in the field of bone marrow transplantation.

This course, designed for hematologists, oncologists, immunologists, internists, pediatricians, family physicians, nurses, social workers, and other practitioners interested in bone marrow transplantation, is presented by the Indiana University School of Medicine Bone Marrow Transplantation Program and the Leukemia Society of America, Indiana Chapter.

Upon completion of program one, participants will be able to: 1) Identify new advances in the areas of allogeneic and autologous bone marrow transplantation unrelated donors, and marrow purging; 2) Discuss alternative approaches which can be pursued for patients who do not have an HLA-identical donor; and 3) Recognize the latest innovations that broaden the applicability of bone marrow transplan-

tation to correct hematologic immunologic, neoplastic, and metabolic disorders.

Program two objectives: 1) Identify psychosocial concepts related to bone marrow transplant patients and families during the various stages of transplant; 2) Discuss strategies for effective psychosocial intervention with patients and families; and 3) Explore the critical challenges and possible solutions facing caregivers of bone marrow transplant patients and families.

The fee for this two-day course is \$120. For more information, call 274-8353.

Course faculty for this event includes: James O. Armitage, MD; University of Nebraska; Leonard I. Boral, M.D., Central Indiana Regional Blood Center; Walter J. Daly, M.D., I.U. School of Medicine; Roger D. Gingrich, M.D., Ph.D., University of Nebraska; Jan Jansen, M.D., Ph.D., I.U. School of Medicine; John H. Kersey, M.D., University of Minnesota; Raymond E. Markham, M.D., Methodist Hematologist/Oncologist; Kenneth L. Pennington, M.D., Arnett Clinic, Lafayette; Richard J. O'Reilly, M.D., Memorial Sloan-Kettering Cancer Center; George W. Santos, M.D., Johns Hopkins University School of Medicine; Rainer Storb, M.D., Cancer Research Center; Gerald L. Thompson, Ph.D., Eli Lilly and Company, Inc.; Guido J. Tricot, M.D., Indiana University School of Medicine; Patricia Clark, R.N., OCN; Charles A. Sammons, Cancer Center Dallas; June Eilers, R.N., MSN, University of Nebraska Medical Center.

Geraldine Herbert, LCSW; Ellen Heyman, R.N., MSN, CS, University Hospitals of Cleveland; Claudia Hoffman, Ed.D., Children's Hospital Medical Center; Phyllis Kaldor, R.N., Ohio State University; Jennifer Karisson, Ph.D., Midwest Children's Cancer Center; Vicki Kennedy, ACSW, Indiana University Medical Center; Lynna Lesko, M.D., Ph.D., Memorial Sloan-Kettering Cancer Center; Molly Loney, R.N., University Hospital of

Cleveland; Camille Wade Maurice, ACSW, Wade Maurice & Associates; Carol McGarigle, R.N., Brigham & Women's Hospital, Boston; Carole Seddon, LCSW, Johns Hopkins Oncology Center; Susan Scritchfield, LISW, Ohio State University; Susan Stensland, ACSW, University of Nebraska Medical Center; and James Zabora, LCSW, Johns Hopkins Oncology Center.

Eighth Annual CURRENT APPROACHES TO RADIATION ONCOLOGY, BIOLOGY AND PHYSICS, March 9, 10, and 11, 1988, San Francisco. This course will provide in-depth coverage of five important areas in radiation oncology management: CNS MALIGNANCIES, BREAST CARCINOMA, HEAD & NECK CANCER, PROSTATIC CARCINOMA, and PEDIATRIC MALIGNANCIES. Through completion of this course, participants should: Understand and incorporate into practice the most current information on the clinical management of malignancies involving the central nervous system, the breast, the prostate, the head and neck and the pediatric group; become familiar with the newest advances in radiation oncology; and be able to integrate biological and physical factors into treatment management. For all three days the course fee is \$295; call 1-800-222-8882.

HARVARD MEDICAL SCHOOL and the department of OBSTETRICS and GYNECOLOGY, GYNECOLOGY ONCOLOGY. March 13th and 14th, 1988. This course is an update in the field of gynecologic oncology for the practicing gynecologist and also those with major interest in malignant lesions of the female reproductive organs. Course will cover such topics as management of pelvic malignancy and pertinent basic concepts in cancer. There will be ample opportunity for interaction with the faculty. 13 credit hours. Course fee is \$285. Call 617-732-1525.

New AIDS Videocassette Examines Common Concerns

The Light VideoTelevision Corporation has produced a compelling videocassette to educate the public on the facts and myths about AIDS. "AIDS: CAN I GET IT?", unlike other documentaries on the subject, (1) is intended for a public ranging from chief executive officers to heads of households, (2) focuses on AIDS as a venereal disease, rather than as a mysterious plague, and (3) emphasizes the benefits of early detection.

The 48-minute videocassette examines common concerns about this life-threatening disease and emphasizes that AIDS cannot be spread through casual contact. Through interviews with 12 renowned medical experts, six FWAs (Friends With AIDS) and numerous people on the street, the tape dispels the mistaken belief that AIDS only strikes homosexuals and drug addicts.

The president of Light VideoTelevision says: "Every family in America should own one of these videocassettes.... We think every CEO in the country should see that every one of his or her employees is provided a tape. The CEO of the Home Video Division of Light VT says: "The cost of getting tapes for every employee will be a fraction of the health care costs for a single

employee stricken with the AIDS virus."

Price of the cassette is \$9.95. Videocassettes may be ordered by calling 1-800-LIGHT-VT. Or mail a check for \$9.95 plus \$2 for the first copy and 50¢ for each additional copy for shipping and handling. The address is: Light VT, 21 Highland Circle, Needham Heights, Mass. 02194.

Hoffman-LaRoche Issues Sedative Drug Warning

Hoffman-LaRoche has issued revised suggestions for the clinical use of Versed®. Clinical experience dictates a revision of the package insert to reflect renewed caution in following dosing and administrative guidelines.

Roche has sent these cautionary materials to more than 500,000 physicians, hospital pharmacists and other health care professionals.

Practitioners who have not received the mailing or who want more information about the drug should contact Carolyn R. Glynn, vice-president and director of Public Policy and Communications, at (201) 235-3315 or Dan McIntyre at (201) 235-5641.

Kodak Introduces Several New Products, Services

Eastman Kodak Company presented a wide range of products and services at the annual meeting of the Radiological Society of North America. These varied from its screen-film systems to its roomlight film handling equipment and the latest advances in electronic image capture, storage and retrieval.

Mammography was covered, showing the maximum images with the least exposure, including the Min-E fast screen with Kodak T-Mat M film, which offers the lowest dosage of any system on the market.

The Kodak 700XR analyzer with its 33-test capacity also was displayed, as was the Kodak Ektachem DT system and its 23-test portable desktop analyzer.

I.U. Gets \$2.5 Million to Study Osteoarthritis

The Section of Rheumatology, Indiana University School of Medicine, has received a five-year, \$2.5 million grant to support basic and clinical research in osteoarthritis. The grant was awarded by the National Institute of Arthritis and Musculo-Skeletal Diseases, a new division of the National Institutes of Health (NIH).

The grant is one of only three such grants awarded for osteoarthritis nationally. It was given only to institutions the NIH classifies as Specialized Centers of Research (SCOR). Already designated as a Multipurpose Arthritis Center, currently receiving more than \$3 million over a five-year period, I.U.'s rheumatology section is the only one in the country to receive additional funding under SCOR.

MUSEUM NOTES ...

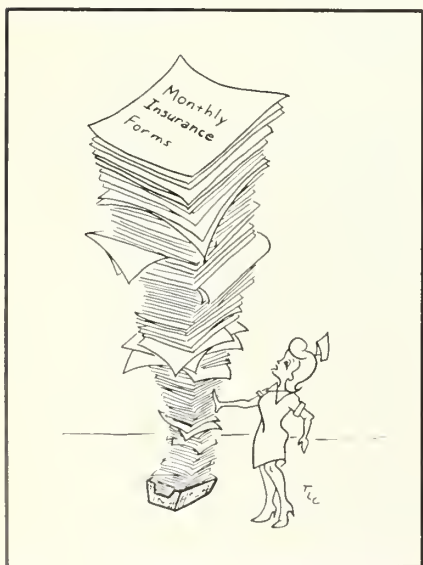
CONTINUED FROM PAGE 114

It is interesting that Fletcher chose to remain as superintendent, given the circumstances, rather than resign, which would appear a more honorable but less exciting course.

In due time, however, it became evident that Dr. Fletcher was in the reform camp so he was dismissed. The acrimony peaked in 1888 and was not settled until the November election, which brought change and reform.

The roles of the two Indiana physicians in this episode bear some relation to their respective activities in the Civil War. Dr. Harrison was a surgeon in an infantry regiment. Fletcher, although a physician, served instead as a spy in a combat zone, a very dangerous assignment in which he narrowly escaped with his life.

By the time of the new presidential election, 1892, the events of the Insane Hospital had faded into memory. Grover Cleveland and Benjamin Harrison were again the candidates. But this time it was Cleveland who emerged the winner.



Alternative Drug Treatment May Help Reduce Pneumonia in Critical Care Patients

A study published in a recent issue of *The New England Journal of Medicine* indicates a new treatment for intensive care patients that may reduce by as much as half the risk of contracting a life-threatening case of pneumonia.

The study, conducted at Boston City Hospital, concludes that sucralfate, an anti-ulcer medication, has less serious side effects than conventional therapies for treating stress ulcers, which are common among intensive care unit patients on respirators.

In this study, pneumonia developed in 23 of the 130 patients: seven (12%) were in the sucralfate group, and 16 (23%) were in the antacid/H₂ blocker group. All of the drug regimens had equal success in preventing stress ulcers.

McDonnell Douglas Gets Nod to Provide NEIC Services

The National Electronic Information Corp. (NEIC), an electronic health claims clearinghouse, has selected the McDonnell Douglas Corp. to provide management and support services to the company over a three-year period. The move is intended to help NEIC

meet its immediate and long-term strategic goals.

McDonnell Douglas, one of the world's largest providers of information systems to the health care industry, also has been named as NEIC's processor for the company's electronic claims distribution system. The system enables health care providers and billing service vendors to submit health claims to participating insurance companies in a standardized format via telecommunications or magnetic tape.

FRACTURETTES

Commentary

The improved x-ray film emulsions available now have silver halide crystals that are essentially flat, like a plain. Before, the crystals were like mountain ridges and valleys.

The information bearing x-rays previously struck the halide crystals at some kind of a varying tangent; now they hit head-on. The advantage is obvious; when a ray strikes a surface at some varying angle or tangent, the absorption is varied, depending on the angle in each small zone. A good example is the tilt of the earth, about 23½°, or the ecliptic; it presents an angle to the sun's rays as it moves around the sun, and varied absorption of the sun's rays results. Thus we have the four seasons in the temperate

Ohio Unveils Free-Standing Alzheimer Treatment Center

The University of Cincinnati is affiliated with a care and research facility that is devoted entirely to patients in all stages of Alzheimer's disease.

The Alois Alzheimer Center, located in suburban Greenhills, also provides strong family support and involvement. The entire staff is trained in the treatment of the medical, social and psychological aspects of each patient.

zones.

But back to x-ray film crystals. This even absorption of the information-carrying photons or x-rays after they have passed through the body, makes sharper, more detailed films of the anatomy. And more detailed diagnoses are becoming possible.

Now I can diagnose fractures in inferior articular processes of the lower lumbar vertebrae, fine bone defects in the pars interarticularies of L5, and fine fractures in the ends of toes and fingers—that I would have missed repeatedly before.

Finding these small details is disturbing to some clinicians. And one jovial, friendly clinician called these "Fracturettes" the other day. I am mentioning these "Fracturettes" to promote an awareness of them.—R.J. Noveroske, M.D., Newburgh

Physician Recognition Awards



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



Deutsch, Howard C., Richmond
Dillon, Gary P., Fort Wayne
Goode, Robert J., Columbus
Gordon, O.T. Jr., Indianapolis
Gourieux, E. DeVerre, Evansville
Kim, Hyun S., Schererville
Krabill, Willard S., Goshen
Krueger, James R., Evansville

Mehta, Shobhana D., Terre Haute
Musselman, Robert H., Fort Wayne
Nicely, Polly G., Indianapolis
Nicholson, Raymond W., Evansville
Pierce, William J., Merrillville
Raves, Joseph L., Princeton
Reed, Edsel S., Jeffersonville
Schloss, Robert P., Fort Wayne
Serwatka, James A., South Bend

Shoemaker, Richard L., Lafayette
Steinmetz, Charles H., Indianapolis
Thong, Siong-Hoat, Fort Wayne
Valenzuela, Roberto D., Merrillville
Yin, Cheng, Ashley
Young, Frederic D., Munster
Young, Robert L., Munster
Zeph, Richard D., Indianapolis

NEWS NOTES

Here and There . . .

Dr. Richard L. Schreiner of Indianapolis is the new chairman of the Dept. of Pediatrics, I.U. School of Medicine, and physician-in-chief of the James Whitcomb Riley Hospital for Children.

Dr. James R. Maybury, a child psychiatrist, has been appointed clinical director of the children's unit at Charter Hospital of Lafayette.

Dr. John A. Bowman, staff psychiatrist at Wabash Valley Hospital, West Lafayette, has been re-appointed president of the professional staff for a two-year term.

Dr. Steven C. Beering, president of Purdue University, has agreed to serve on the Board of Regents of the National Library of Medicine for a four-year term; Dr. Beering was formerly dean of the Indiana University School of Medicine.

Dr. Kenneth C. Castor and Dr. Jack A. Morgenstern of Fort Wayne discussed "Hyperactivity and Attention Disorders" at Charter Beacon Hospital in December.

Dr. Robert N. Hunt and Dr. M. Gerald Quinn of South Bend conducted a medical education program on transfusion therapy at St. Joseph's Medical Center in December.

Dr. John C. Spellmeyer, director of radiology at Reid Memorial Hospital, Richmond, has received the first Paul

S. Rhoads Award for Outstanding Continuing Medical Education Lecture.

Dr. Samuel M. Wentworth of Danville, a pediatric diabetes specialist, discussed "Diabetes: The Positive Side" at Bloomington Hospital in December.

Dr. Bruce F. Schilt, a Noblesville cardiologist, discussed "Diet, Exercise and Cholesterol" at Riverview Hospital in December.

Drs. David P. Lloyd and John E. Westfall, Fort Wayne, and Joseph F. Faust, Marion, have been named fellows of the American College of Surgeons.

Drs. Charles A. Bonsett, George Parker and, posthumously, C. Powell VanMeter and Irvin W. Wilkins were elected distinguished physicians during the second annual Fellowship of Distinguished Physicians banquet sponsored by Community Hospitals Indianapolis.

Dr. Steve M. Barlow, pathologist at Dunn Memorial Hospital, described the duties of a hospital pathologist for members of the Mitchell Rotary Club at a recent meeting.

Dr. Randolph W. Lievertz of Indianapolis discussed alcoholism on a public affairs radio program in December; he is a member of the Greater Indianapolis Council on Alcoholism.

New ISMA Members

Robert B. Arthur, M.D., Indianapolis, family practice.

Paul K. Awa, M.D., Griffith, anesthesiology.

Andrew D. Bailey, M.D., New Albany, gastroenterology.

Brian A. Beard, M.D., Indianapolis, obstetrics and gynecology.

Eric S. Bindewald, M.D., Indianapolis, internal medicine.

James R. Bognanno, M.D., Indianapolis, radiology.

Dusan Bozinovich, M.D., Indianapolis, internal medicine.

David G. Breitwieser, M.D., Indianapolis, family practice.

Terri Y. Brown, M.D., Indianapolis, family practice.

John W. Bulger, M.D., Mishawaka, family practice.

Saverio Capjti, M.D., Indianapolis, radiology.

Geetha R. Cattamanchi, M.D., Hammond, pediatrics.

James P. Caughlin, M.D., Indianapolis, internal medicine.

Kenneth D. Cloud, M.D., Indianapolis, emergency medicine.

James S. Cohen, M.D., Indianapolis, rheumatology.

Roberta E. Coleman, M.D., Floyds Knobs, emergency medicine.

Steven G. Conant, M.D., Indianapolis, psychiatry.

Joyce Confer-Gill, M.D., Indianapolis, family practice.

Mark G. Costopoulos, M.D., Indianapolis, internal medicine.

Eileen E. Cravens, M.D., Richmond, gastroenterology.

Michael E. Day, M.D., Indianapolis, family practice.

Carol Dickhaus, M.D., Indianapolis, pediatrics.

Myron K. Dill, M.D., Indianapolis, internal medicine.

William M. Ducey, M.D., Richmond, general surgery.

Fredric L. Edwards, M.D., Indianapolis, pediatrics.

Thomas W. Emmett, M.D., Indianapolis, internal medicine.

Jonathan J. Evans, M.D., Indianapolis, pediatrics.

Wayne Evans, M.D., Indianapolis, obstetrics and gynecology.

Margaret E. Feemster, M.D., Indianapolis, pediatrics.

John M. Fennig, M.D., Indianapolis, internal medicine.

Alexander Ferenczy, Bloomington, emergency medicine.

Samuel J. Flanders, M.D., Indianapolis, pediatrics.

Joe Blinn Fox, M.D., Indianapolis, internal medicine.

Howard I. Friedman, M.D., Indianapolis, internal medicine.

David D. Gallagher, M.D., Richmond, orthopedic surgery.

William H. Garner III, M.D., New Albany, general surgery.

William C. Gray, M.D., Richmond, diagnostic radiology.

Timothy W. Greist, M.D., Indianapolis, family practice.



Marla H. Guzman, M.D., Indianapolis, family practice.

Robert C. Hall, M.D., Indianapolis, general surgery.

Bradley P. Hamrick, M.D., Indianapolis, internal medicine.

Kerry Ann Herdt, M.D., Indianapolis, pediatrics.

Kristine A. Hess, M.D., Indianapolis, dermatology.

Warren J. Hoyt, M.D., Indianapolis, family practice.

Michael P. Jacobson, M.D., Indianapolis, internal medicine.

David W. Johnson, M.D., Evansville, physical medicine and rehabilitation.

Henry L. Jones, M.D., Indianapolis, pediatrics.

Danny P. Kaup, M.D., Valparaiso, emergency medicine.

Marshall B. Keltner, M.D., Indianapolis, obstetrics and gynecology.

David R. Kosten, M.D., Indianapolis, pediatrics.

Thomas W. Kuebler, M.D., Indianapolis, internal medicine.

James G. Leatherman, M.D., Indianapolis, family practice.

Cora E. Lewis, M.D., Indianapolis, internal medicine.

Jeffery J. Libra, M.D., Rolling Prairie, family practice.

Rodney C. Lovett, M.D., Indianapolis, general surgery.

Steven J. Lucks, M.D., Indianapolis, anesthesiology.

D. Mark Mahler, M.D., Indianapolis, pediatrics.

Peggy L. Mahoney-Hamer, M.D., Indianapolis, emergency medicine.

Joseph S. Mallov, M.D., Indianapolis, internal medicine.

Alan B. McDaniel, M.D., New Albany, otolaryngology.

Anjali Mehta, M.D., Indianapolis, obstetrics and gynecology.

Louis A. Miceli, D.O., Hammond, pediatrics.

Thomas P. Miller, M.D., Indianapolis, family practice.

C. V. Mosby Company has a new book, *Microsurgery for Major Limb Reconstruction*. The text consists of contributions from 68 experts. The book is edited by James R. Urbaniak, M.D. 464 pages, 603 illustrations. Price is \$75. May be obtained for 30-day free examination.

John S. Mitchell, M.D., Indianapolis, pediatrics.

Anne C. Ogren, M.D., Indianapolis, pediatrics.

Adrian M. Oleck, M.D., Indianapolis, internal medicine.

Richard L. Owens, M.D., Bloomington, emergency medicine.

Michael E. Pauszeck, M.D., Franklin, internal medicine.

Emil Pelech Jr., M.D., Indianapolis, internal medicine.

Elizabeth S. Peterson, M.D., Indianapolis, pediatrics.

Deborah R. Radecki, M.D., Indianapolis, pediatrics.

Marilyn S. Rausch, M.D., Indianapolis, family practice.

Willem K. Rivenburg, M.D., Indianapolis, internal medicine.

J. Richard Roskam, M.D., Indianapolis, internal medicine.

Jonathan B. Sands, M.D., Indianapolis, internal medicine.

Sara I. Schmidt-Burke, M.D., Indianapolis, emergency medicine.

Peter V. Sefton, M.D., Indianapolis, family practice.

Philip E. Segal, M.D., Indianapolis, internal medicine.

Issa Shammash, M.D., Indianapolis, internal medicine.

Frank A. Shirley, M.D., Indianapolis, general surgery.

Gary G. Shull, M.D., Indianapolis, internal medicine.

Lewis E. Smith Jr., M.D., Indianapolis, internal medicine.

Roberta M. Smith, M.D., Indianapolis, pediatrics.

Mark L. Snelling, M.D., Indianapolis, pediatrics.

Patricia Anne Sobczyk, M.D., Indianapolis, internal medicine.

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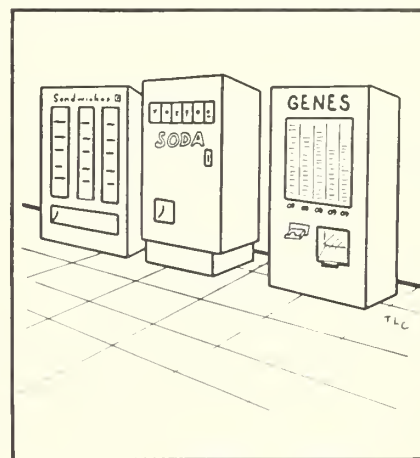
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Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.



The One Best Motivator

By Arthur R. Pell, Ph.D.

Consultant, Dale Carnegie & Associates, Inc.

"My people couldn't care less about their jobs. If I don't keep pushing them, nothing will be accomplished," sighed Al.

"I don't have that problem at all," Carl responded. "My gang is always willing to put forth whatever effort is needed to get the job done."

What is the reason for these diametrically opposite attitudes of the workers that each of these managers supervise? Why is Carl's group so much more highly motivated than Al's. It could be the management style of the supervisor or it could be the work itself.

Behavioral scientists generally agree that although employee motivation is enhanced by such factors as recognition, appreciation, challenge and, of course, fair treatment, the most effective motivator of all is the work itself. If Al's people find their jobs boring and unchallenging, no matter how good a supervisor Al may be, he will have a tough time motivating them. On the other hand, if Carl's people enjoy their work so much that they can't wait to come in every morning and hate to leave each evening, there is little else Carl need do to keep them motivated.

Enrich the Job

Unfortunately, a great percentage of jobs in industry today are merely routine, and it is difficult, if not impossible, to generate excitement about them. One way to overcome this is to enrich the job.

When Jennifer was hired to head the claims processing department of the Liability Insurance Company, she inherited a department with low morale, manifested by high turnover, absenteeism and disgruntled employees. The claims processing operation was an "assembly line." Each clerk checked a section of the claims form, passed it to the next clerk, who checked the next section, and so on. If an error or question on interpretation was discovered, it was put aside for handling by a specialist. From an operational viewpoint, this was highly efficient. However, it made the work dull and unchallenging. Jennifer reorganized the system. She enriched the job by eliminating the "assembly line." Each clerk checked the entire form, corrected errors and sought interpretations. This required added training and did slow the work down in the beginning, but it paid off in developing a highly motivated team of workers who were really interested in their jobs. Turnover, absenteeism and dissatisfaction were significantly reduced, and once the system was fully established, speed and accuracy were increased.

Involve Your People

The automobile industry in the United States has suffered badly from foreign competition. When the Ford Motor Company planned the manufacture of the Taurus, they recognized the need to have a highly motivated workforce to build it. Instead of following the usual industry practice of designing the car and keeping all plans secret until production was started, Ford called on the workers who would build the car to make suggestions on features, manufacturing techniques, quality and other matters.

This policy was started at the beginning of the planning stage and carried throughout the entire procedure. All workers' suggestions were given careful consideration, and each person who made a suggestion was kept informed as to its status. If the suggestion was not accepted, the reason for rejection was explained. This made each worker on the Taurus sincerely feel that he or she had contributed to the development of the car and it resulted in a highly motivated workforce that has produced one of Ford's most successful automobiles.

When productivity expected is quantifiable, many companies establish production quotas for their workers. This is particularly true in sales and many manufacturing and office positions. Denise heads the Word Processing Section of her company. She has established specific quotas for most of her mass-mailing projects and can measure how well her people are doing by how close they come to meeting the quotas. Denise noted that even her best workers rarely would produce more than the quota. When she tried to increase the number of letters expected, she was faced with resentment and even overt opposition.

When a new project was being planned, instead of superimposing a quota for the project, Denise asked the people who would work on it to study the project and suggest production goals. To her surprise, they recommended higher quotas than she would have indicated.

Managers and the workers together should establish quotas and or goals that are attainable and acceptable by both. When a person has participated in establishing quotas, that person will feel committed to meet that quota and will willingly work to assure that it is met.

In his book, "How to Win Friends and Influence People," Dale Carnegie anticipated what the behavioral scientists later promulgated. He wrote: "No one likes to feel that he or she is being sold something or told to do a thing. We much prefer to feel we are buying of our own accord or acting on our own ideas. We like to be consulted about our wishes, our wants, our thoughts."

Quality Circles

Over the past decade, American business executives have been studying some of the tools Japanese managers have used to make them so successful. One of the most frequently discussed factors is the use of quality circles. A quality circle consists of a group of workers who meet on a regular basis to discuss how the quality of their work can be improved. Because these people are working on these products all the time, they are more familiar with the intricacies of the process and problems that may arise. Not only does the company benefit from this expertise, but because the workers are involved in changes that are suggested and made, they are motivated to assure that the changes will be successful.

The key to the success of these programs is the sincerity of management in dealing with the groups. The participants view their role as an integral part of the company policy. Even those workers who are not part of the circle generally catch the enthusiasm generated by the participants. Although they have not personally taken part in the deliberations, they will commit themselves to the decisions because their peers -- not just the boss -- have helped frame them.

Get your people involved. By engendering an attitude that the job to be done is mutual effort of management and labor --not "superiors" ordering "inferiors" to perform a task, you will make the work more interesting and the people engaged in that work more highly motivated to accomplish the job.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

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Vomiting	Nausea	Headache	Anorexia	Constipation
Reduced 90%	Reduced 86%	Reduced 72%	Reduced 62%	Reduced 60%

- Only 1/3 the dropout rate due to side effects of amitriptyline alone, although the incidence of side effects is similar¹

Caution patients about the combined effects of Limbitrol with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as operating machinery or driving a car. In general, limit dosage to the lowest effective amount in elderly patients.

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Write "Do not substitute."

In moderate depression
and anxiety

Limbitrol[®]

Each tablet contains 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) ^{IV}

Limbitrol[®] DS

Each tablet contains 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) ^{IV}

References: 1. Feighner JP, et al. *Psychopharmacology* 61: 217-225, Mar 22, 1979. 2. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.

Limbitrol[®] ^{IV} Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those at barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady state concentrations of the tricyclic drugs. Concomitant use of Limbitrol with other psychotropic drugs has not been evaluated, sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring

reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion.

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.


Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single h.s. dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol DS (double strength) Tablets, initial dosage at three or four tablets daily in divided doses, increased up to six tablets or decreased to two tablets daily as required. Limbitrol Tablets, initial dosage of three or four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: Double strength (DS) Tablets, white, film-coated, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt), and Tablets, blue, film-coated, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt). Available in bottles of 100 and 500, Tel-E-Dose[®] packages of 100, Prescription Paks of 50.



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Please see summary of product information on adjacent page.

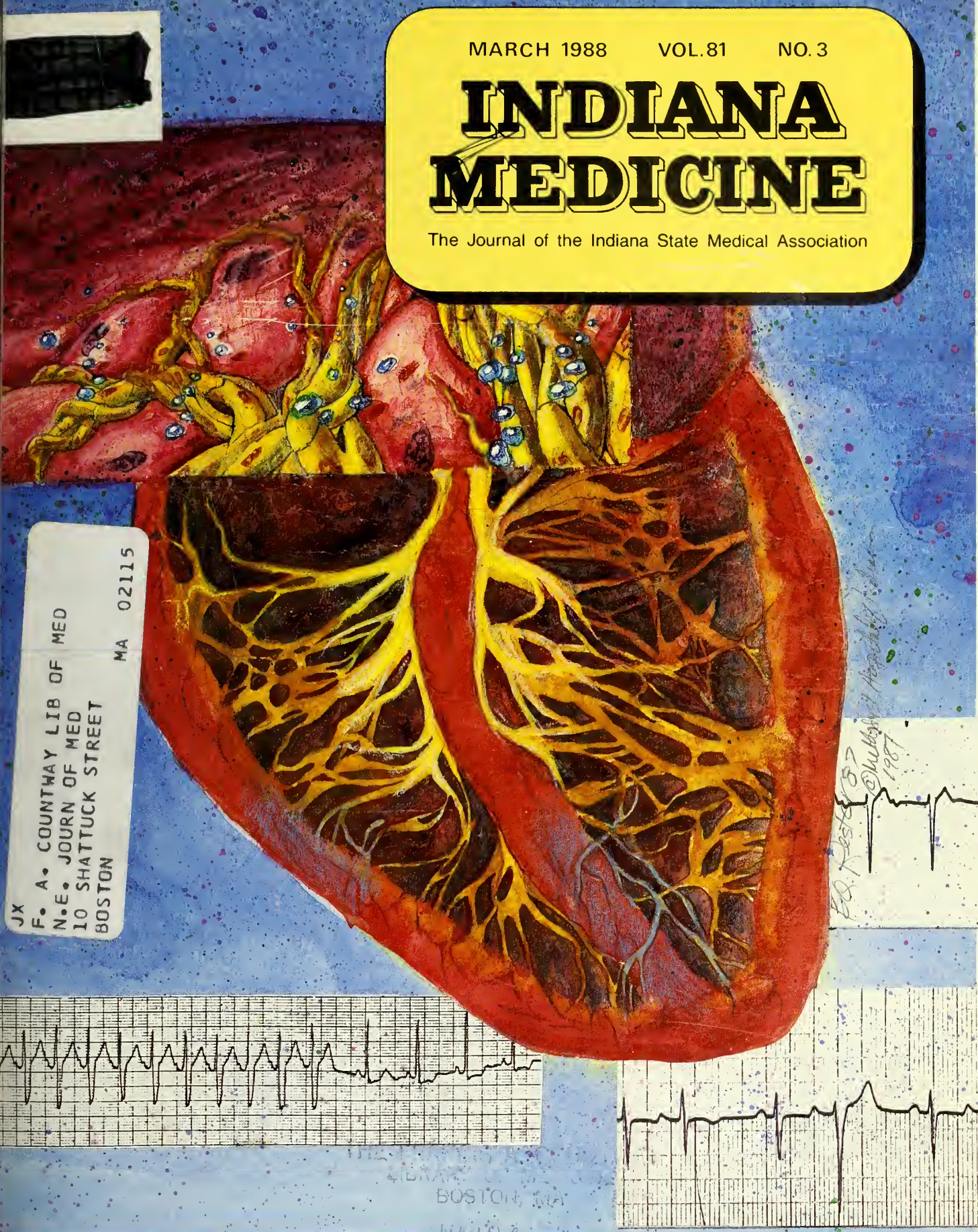
MARCH 1988

VOL. 81

NO. 3

INDIANA MEDICINE

The Journal of the Indiana State Medical Association



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Supraventricular Aberrancy

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INDIANA MEDICINE

Vol. 81, No. 3
MARCH 1988

Devoted to the interests of the medical profession and public health in Indiana since 1908.

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USPS 284-440
ISSN 0746-8288

POSTMASTER: Send address changes to
Indiana State Medical Association, c/o
Membership Department, 3935 N. Meri-
dian St., Indianapolis, Ind. 46208.

INDIANA MEDICINE is published
monthly by the Indiana State Medical
Association. Second-class postage paid
at Indianapolis, Ind.

Address correspondence relating to
editorial material, advertising or
subscriptions to: INDIANA MEDICINE,
3935 N. Meridian St., Indianapolis, Ind.
46208. Phone (317) 925-7545.

Annual subscription rates: \$20
domestic, \$22 Canada, \$23 foreign.
Medical library rates: \$18 domestic, \$20
Canada, \$21 foreign. Senior ISMA
members and full-time Indiana medical
students—\$10. Single copies not avail-

able. Subscriptions are renewable
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editorial requirements. Publication dead-
line: 1st day of month preceding month
of issue. Instructions for authors avail-
able upon request.

All issues since 1967 are available on
microfilm from University Microfilms In-
ternational, 300 N. Zeeb Rd., Ann Ar-
bor, Mich. 48106. Indexed in Index
Medicus and Hospital Literature Index.

Advertising rates and data available
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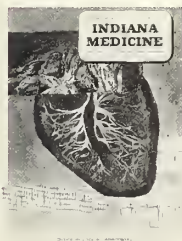
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ABOUT THE COVER

"Supraventricular Aberrancy" is the title of this month's Adult Critical Care article. The author, Dr. Gary R. Fisch, says it is important to distinguish aberration from ven-
tricular arrhythmia because aberration is transient and
usually harmless, therefore requiring no treatment.



STETHOSCOPE

EXAMINING STATE & NATIONAL MEDICAL ISSUES

Numerous complaints from doctors across the nation about how the new Medicare "medically unnecessary" rule is being administered have prompted a request from the AMA for changes. The rule requires non-participating physicians to refund fees to patients for procedures that the Medicare carrier determines were "medically unnecessary."

At issue: patients being sent refund notices prematurely with no attempt by carriers to secure additional documentation to determine medical necessity.

Reports indicate claims submitted by patients have been rejected for payment because they did not include an adequate explanation of the diagnosis.

Also of concern: terms "medically unnecessary" and "uncovered" used interchangeably.

The AMA previously met with William Roper, M.D., Health Care Finance Administrator, and has requested a second meeting. Will seek: 1. Opportunities for physicians to submit additional information before patients are mailed refund notices; 2. Detailed instructions from carriers about what is needed to justify medical necessity; 3. Acceptable language in claims denial letters that now imply physicians are "guilty," when additional information may substantiate the claim.

Closer to home, Indiana legislators have reportedly received calls from constituents who felt they were being coerced by their physician into signing the "medically unnecessary" forms. The patients said they didn't understand what they were signing and feared being denied medical care. ISMA is working to clarify this issue with its members and the legislators.

AMA protested the restrictive new family planning regulations announced in February by the Department of Health and Human services. The restrictions will penalize those who need family planning services most, the young, the poor and the disadvantaged, the AMA's representative said.

An amendment to the Civil Rights Restoration Act passed over AMA objections. The amendment would deny persons with contagious diseases, including AIDS, the protection against discrimination afforded under the Federal Rehabilitation Act.

In a related issue, the American Bar Association has joined the AMA to support legislation that would establish federal standards to assure confidentiality of AIDS-related information.

A new report, "Price Controls for Medical Services and the Medical Needs of the Nation's Elderly," by William Baumol, PhD, pokes holes in government policy makers' arguments that ceilings on physician fees will cut Medicare costs.

Dr. Baumol, professor of economics at Princeton and New York Universities, told the Physician Payment Review Committee (PRCC) that physician fee ceilings for Medicare services will reduce quality and quantity of services available. The study indicates differences in medical care market not found in industry. In the medical care sector, new technology does not increase productivity, but often increases prices.

The professor makes three suggestions: 1. Anticipatory budgeting; 2. systematic cost sharing with enhanced user fees; and 3. funding of research into cost-saving methods.

The first two suggestions are cornerstones of the AMA's "Protecting the Elderly" proposal for financing health care and restructuring the Medicare program.

IN INDIANA...

Pre-marital AIDS testing has undergone lengthy debate as SB 9, the comprehensive AIDS bill, has moved through the committee process in the Indiana General Assembly. At this writing, the bill provides for voluntary testing for pre-marital applicants, that premarital applicants are to receive information on dangerous communicable diseases (including AIDS), and that prior consent must be obtained prior to administration of an HIV test.

An amendment on the House floor for mandatory pre-marital testing is expected as the bill goes through second reading.

Legislation to prohibit the use of steroids to enhance physical performance is expected to pass in a House vote. This bill, SB 415, evolved from ISMA House of Delegates action.

Another ISMA-initiated bill, SB 235, which would ban the promotional distribution of tobacco to minors, was amended by the House Public Health Committee to include a penalty on minors who purchase tobacco.

Legislation which would have established drug testing criteria for businesses and schools is dead for this legislative session.

Recommendations of the Governor's Prescription Abuse Study Committee cannot take effect until 1989, as the result of an amendment passed by the House Public Health Committee. Under current law, the study committee could make administrative recommendations for implementation of a triplicate prescription program in 1988. Now, as a result of the amendment, the legislature can review the work and recommendations of the prescription abuse study committee in 1989.

HB 1070, which deals with the medical review panel process under the Medical Malpractice Act, provides that the panel must explain delays in the panel process to the insurance commissioner, if the panel fails to reach a decision in 180 days.

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MEDICAL MUSEUM NOTES



CHARLES A. BONSETT, M.D., Indianapolis

ESTABLISHMENT OF the Indiana Medical College, School of Medicine, Purdue University, was announced on page 5 of the *Indianapolis News* for Sept. 28, 1905. It was reported that the faculty and student body of the Central College of Physicians and Surgeons, together with the faculty and students of the Medical College of Indiana and the Fort

students had been met at Union Station in Indianapolis on the morning of Oct. 9 by the student body of the two Indianapolis schools; all together, they formed a parade and marched up Illinois Street, making a loop around the Circle before going to West Market

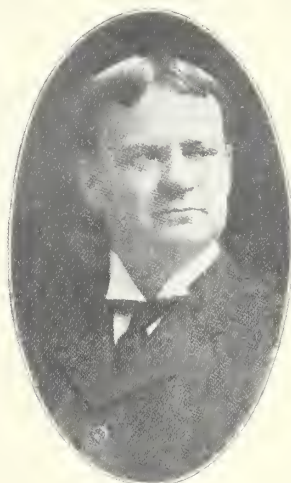
Street and Senate Avenue, the location of Purdue's new School of Medicine.

Shown on this page are photographs of the era, used to publicize the school, which would later (1908) become incorporated into Indiana University School of Medicine.

Indiana Medical College School of Medicine Purdue University 1906-1908

Wayne College of Medicine, had effected a union with Purdue University to form the college.

Earlier in the month, the *Indianapolis Star* (Sept. 25, p. 1) reported first that the Central College of Physicians and Surgeons would unite with Indiana University and later (Sept. 26, p. 1) that it would unite with Purdue. Page 3 of the Oct. 10 issue shows the students from the Fort Wayne College of Medicine entering the School of Medicine, Purdue University. These



Dr. John Oliver (1860-1927), treasurer of the Indiana Medical College, was elected president of the ISMA in 1916. Later, he was appointed to the chair of surgery endowed by Mr. and Mrs. W.H. Coleman of I.U.M.C.



Dr. J. Rilus Eastman (1872-1943), a son of Dr. Joseph Rilus Eastman (a founder of the Central College of Physicians and Surgeons), was elected president of the ISMA in 1917. He was later a founder and governor of the American College of Surgeons.



Dr. Oliver's clinic at St. Vincent Hospital



Dr. Eastman's clinic at City Hospital

The amphitheatres shown here were razed many years ago.

Final Plans Announced for ISMA's Mid-Year Leadership Conference

Dr. James H. Sammons, executive vice-president of the American Medical Association, will be the keynote speaker for the ISMA Mid-Year Leadership Conference next month. The one-day meeting will be conducted Saturday, April 23, at the Lincoln Hotel and University Conference Center in Indianapolis.

Dr. Sammons, who is well known for his straightforward presentations, will explain to ISMA officers, trustees, alternate trustees, county society officers, state specialty society officers and others how to become more effective leaders in organized medicine.

Workshops dealing with the media, peer review/licensing and finances will be highlighted during the conference. Participants will have a chance to question a panel of experts from several regulatory agencies, including Dr. Paul Muller of Peerview, Mike Minglin of the Indiana Attorney General's Office, William Keown of the Health Professions Service Bureau, and Dr. John Miller, president of the Medical Licensing Board.

A special session conducted by ISMA's Commission on Physician Assistance will address the matter of identifying and dealing with physicians who have substance abuse problems.

Julie Newland, ISMA's director of government relations, will review the 1988 session of the General Assembly and will outline the Association's strategy for next year's session. Adele Lash, ISMA director of public relations, will provide instructions on how to get the best results during media interviews; physicians then will be given an opportunity to practice the concepts involved.

Finally, Ed Kelsey, chief legal counsel for the Oklahoma Medical Society, will offer some humorous observations during an after-dinner presentation.

Reservation information was scheduled for mailing in early March. For additional information, call Sheryl Mahoney at ISMA headquarters—1-800-382-1721 or (317) 925-7545.

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Contraindications: Known hypersensitivity to the drug.

Warnings: Warn patients that mental and/or physical abilities required for tasks such as driving or operating machinery may be impaired, as may be mental alertness in children, and that concomitant use with alcohol or CNS depressants may have an additive effect. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage. Withdrawal symptoms (including convulsions) reported after abrupt cessation of extended use of excessive doses are similar to those seen with barbiturates. Milder symptoms reported infrequently when continuous therapy is abruptly ended. Avoid abrupt discontinuation; gradually taper dosage.

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychotic patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically. Due to isolated reports of exacerbation, use with caution in patients with porphyria.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Usual Daily Dosage: Individualize for maximum beneficial effects. **Oral—Adults:** Mild and moderate anxiety disorders and symptoms, 5 or 10 mg t.i.d. or q.i.d. severe states, 20 or 25 mg t.i.d. or q.i.d. **Geriatric patients:** 5 mg b.i.d. to q.i.d. (See Precautions.)

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FUTURE FILE

St. Vincent Hospital CME

April 23: 6th Annual Spring Seminar in Dermatopathology; Clifford R. White Jr., M.D., guest lecturer; Cooling Auditorium, St. Vincent Hospital.

May 6-7: 8th Annual Joseph C. Finneran Surgical Professorship; Professor Sir Geoffrey Slaney, KBE, FRCS, Birmingham, England, guest lecturer; Cooling Auditorium, St. Vincent Hospital.

May 11-12: Midas Rex Orthopedic Surgery Workshop, Sheraton Marten House.

May 13-14: Progress in Cardiology: An Update, Indianapolis Hilton Hotel.

May 27: Annual "500" Orthopedic Conference, Cooling Auditorium, St. Vincent Hospital.

For more information, call Marilyn Soltermann, CME coordinator, St. Vincent Hospital, Indianapolis—(317) 871-3460.

Hand Surgery

"Comprehensive Review Course in Hand Surgery" is the title of a CME exercise to be conducted by the American Society for Surgery of the Hand at the Chicago Marriott Downtown, April 13-16.

For program and registration information, contact the Society at 3025 S. Parker Road, Suite 65, Aurora, Colo. 80014—(303) 755-4588.



The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Child Care

The 23rd Annual Indiana Multidisciplinary Child Care Conference will be held May 18-19 at Union Station Holiday Inn in downtown Indianapolis.

Subjects to be discussed will include management of asthma, office laboratory testing, sports medicine, office allergy and immunology, pediatric infectious disease, and nutrition, fluid and electrolytes.

For more information contact: Dr. Richard Schreiner, Indiana University School of Medicine, Riley Hospital for Children, One Children's Square, Indianapolis 46223.

Indiana University CME

April 11-13: Update Workshop in Echocardiography: Coronary Artery Disease, Exercise Quantitation; Lincoln Hotel and University Conference Center, Indianapolis.

April 13-14: 1988 Symposium on Mammography and Breast Ultrasound, Lincoln Hotel, Indianapolis.

April 16-17: Advanced Trauma Life Support, Wishard Hospital, Indianapolis.

April 21-22: 11th Annual Arthur B. Richter Conference: The Diagnosis and Treatment of Borderline Personality, Lincoln Hotel, Indianapolis.

April 22: Improved Treatment Regimens in Curable Cancer, Lincoln Hotel, Indianapolis.

April 28: Advances in Bone Marrow Transplantation, Lincoln Hotel, Indianapolis.

For more information on these and other CME programs, call Melody Dian, CME assistant director—(317) 274-8353.

Methodist Hospital CME

April 20: Sexual Dysfunction Seminar, Methodist Hospital Auditorium.

April 28 & 29: Advanced Cardiac Life Support Course, Methodist Hospital Wile Hall.

May 5, 6 & 7: 14th Annual Wishard Lecture, at Indiana University and Methodist Hospital.

May 19 & 20: 23rd Annual Batman Lecture Series, Methodist Hospital Auditorium.

May 20: Laser Lithotripsy, Stone Management Workshop, Methodist Hospital Wile Hall #320.

June 10 & 11: Ohio Valley Lake Erie Association of Cancer Centers Annual Meeting, Methodist Hospital Auditorium.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana—(317) 929-3733.

Hand Injuries

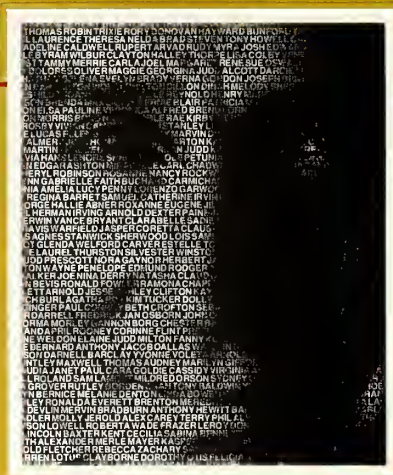
"Tendon and Soft Tissue Injuries of the Hand" is the title of a CME course to be conducted by the American Society for Surgery of the Hand at The Cottage Resort, Hilton Head, S.C., April 27-30.

For a copy of the program and full particulars, contact the Society at 3025 S. Parker Road, Suite 65, Aurora, Colo. 80014—(303) 755-4588.



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 EBOT WENDY ELVIS HAGEN PEG
 ENJAMIN KLAUS FAYE JODY VA
 ALCOLM ANDREW NYDIA RAY
 ARVEY ROBERT KRISTEN JIM
 ASEY ORLANDO PIA WARREN
 HERESA JOE ANTHONY WEBB
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BRIEF SUMMARY (FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)

INDERAL® LA brand of propranolol hydrochloride (Long Acting Capsules)

DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 60 mg, 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. Inderal is a nonselective, beta-adrenergic receptor-blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor-stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by Inderal, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

Inderal LA Capsules (60, 80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with Inderal LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of Inderal Tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

Inderal LA should not be considered a simple mg-for-mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to Inderal LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, Inderal LA has been therapeutically equivalent to the same mg dose of conventional Inderal as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure, and rate pressure product. Inderal LA can provide effective beta blockade for a 24-hour period.

INDICATIONS AND USAGE. **Hypertension:** Inderal LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. Inderal LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: Inderal LA is indicated for the long-term management of patients with angina pectoris.

Migraine: Inderal LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: Inderal LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. Inderal LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. Inderal is contraindicated in 1) cardiogenic shock; 2) sinus bradycardia and greater than first-degree block; 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with Inderal.

WARNINGS. **CARDIAC FAILURE:** Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or Inderal should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of Inderal therapy. Therefore, when discontinuance of Inderal is planned, the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If Inderal therapy is interrupted and exacerbation of angina occurs, it is usually advisable to reinstitute Inderal therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema) — PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. Inderal should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Inderal (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, eg, dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOLYCEMIA: Beta blockers should be used with caution in diabetic patients if a beta-blocking agent is required. Beta blockers may mask tachycardia occurring with hypoglycemia, but other manifestations such as dizziness and sweating may not be significantly affected. Following insulin-induced hypoglycemia, propranolol may cause a delay in the recovery of blood glucose to normal levels.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol may change thyroid function tests, increasing T_4 and reverse T_3 , and decreasing T_3 .

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. GENERAL: Propranolol should be used with caution in patients with impaired hepatic or renal function. Inderal (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that Inderal may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if Inderal (propranolol HCl) is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Caution should be exercised when patients receiving a beta blocker are administered a calcium-channel-blocking drug, especially intravenous verapamil, for both agents may depress myocardial contractility or atrioventricular conduction. On rare occasions, the concomitant intravenous use of a beta blocker and verapamil has resulted in serious adverse reactions, especially in patients with severe cardiomyopathy, congestive heart failure, or recent myocardial infarction.

Aluminum hydroxide gel greatly reduces intestinal absorption of propranolol.

Ethanol slows the rate of absorption of propranolol.

Phenytoin, phenobarbital, and *n*-meprobamate accelerate propranolol clearance.

Chlorpromazine, when used concomitantly with propranolol, results in increased plasma levels of both drugs.

Antipyrine and lidocaine have reduced clearance when used concomitantly with propranolol.

Thyroxine may result in a lower than expected T_3 concentration when used concomitantly with propranolol.

Cimetidine decreases the hepatic metabolism of propranolol, delaying elimination and increasing blood levels.

Theophylline clearance is reduced when used concomitantly with propranolol.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY: Pregnancy Category C. Inderal has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. Inderal should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS: Inderal is excreted in human milk. Caution should be exercised when Inderal is administered to a nursing woman.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Light-headedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to cataplexy; visual disturbances; hallucinations; vivid dreams; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics. For immediate formulations, fatigue, lethargy, and vivid dreams appear dose related.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasisiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. Inderal LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from Inderal Tablets to Inderal LA Capsules, care should be taken to assure that the desired therapeutic effect is maintained. Inderal LA should not be considered a simple mg-for-mg substitute for Inderal. Inderal LA has different kinetics and produces lower blood levels. Retitration may be necessary, especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION — Dosage must be individualized. The usual initial dosage is 80 mg Inderal LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS — Dosage must be individualized. Starting with 80 mg Inderal LA once daily, dosage should be gradually increased at three- to seven-day intervals until optimal response is obtained. Although individual patients may respond at any dosage level, the average optimal dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE — Dosage must be individualized. The initial oral dose is 80 mg Inderal LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimal migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximal dose, Inderal LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS — 80-160 mg Inderal LA once daily.

PEDIATRIC DOSAGE — At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

*The appearance of these capsules is a registered trademark of Ayerst Laboratories.

Reference:

1. Data on file, Ayerst Laboratories.

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Neurofibromatosis: An Update

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KAREN L. ROOS, M.D.
Indianapolis

THE PAST 10 YEARS have been a time of increased awareness and knowledge about neurofibromatosis (NF). Medical understanding of this disease and its complications has been advanced by the clinical and research experience obtained in the 58 clinical care centers that are now present in the United States. The public has become aware of the disease from the Pulitzer Prize-winning play and film, *The Elephant Man*. Recently, the chromosomal defects for at least two forms of neurofibromatosis have been delineated. This growing awareness of the disease, its complications and genetic basis prompted an NIH Consensus Conference on NF in July 1987.

In this report, we will review the definitions of neurofibromatosis proposed by the NIH Consensus Conference¹ and discuss the natural history and complications of this disorder, as well as make recommendations for initial evaluation and follow-up of individuals with NF. Finally, we will

review some of the new advancements in the understanding of the genetic basis of NF. The clinical data presented in this review have been obtained from the Indiana University Neurofibromatosis Clinic, which was established at the Medical Center in July 1986.

Clinical Definition of NF-1 and NF-2

At the recent NIH Consensus Conference, neurofibromatosis was divided into two definite categories, NF-1 and NF-2, with a qualification that there are possibly additional variants of neurofibromatosis.¹ Under this new classification, patients who previously met the criteria for Von Recklinghausen NF or peripheral NF, now would be classified as NF-1. Patients with bilateral acoustic neuromas are classified as NF-2. Both are autosomal dominant disorders. It is estimated that NF-1 affects one in 3,000 people in the United States, and that NF-2 affects one in 50,000.

NF-1 is present in an individual with

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at least two of the following seven criteria:

1. At least six *cafe-au-lait* spots larger than five millimeters in children and 15 millimeters in teenagers and adults.

2. At least two neurofibromas or one plexiform neurofibroma.

3. Axillary or inguinal freckling.

4. Optic nerve glioma.

5. Two or more iris nodules (Lisch nodules).

6. Characteristic bony lesion, such as sphenoid wing dysplasia or thinning of the long bone cortex, with or without pseudoarthrosis.

7. A parent, sibling or child with definite NF-1.

NF-2 is present in an individual who has either bilateral eighth cranial nerve tumors, or a first degree relative with NF-2 and either a unilateral eighth cranial nerve tumor or two of the following: dermal or subcutaneous neurofibromas, plexiform neurofibroma, schwannoma, glioma, meningioma, or presenile posterior cataract.

These criteria can be used to establish a diagnosis of NF-1 or NF-2, but cannot be used to rule out the diagnosis. This is particularly important for the younger child, who may show only *cafe-au-lait* spots, but who may develop axillary freckling, iris nodules, or cutaneous neurofibromas around the beginning of the teenage years. It is probably necessary to follow an individual, at least until he has reached his twenties, for NF-1, and perhaps even longer for NF-2, before using these criteria to exclude neurofibromatosis.

Manifestations of NF-1:

Cafe-au-lait spots are often the first sign of neurofibromatosis and may be present at birth. They tend to increase in number during the first years of life.² These lesions are hyperpigmented macules of variable size found predominantly on the trunk, but occasionally involving all areas of the body with the possible exception of palms

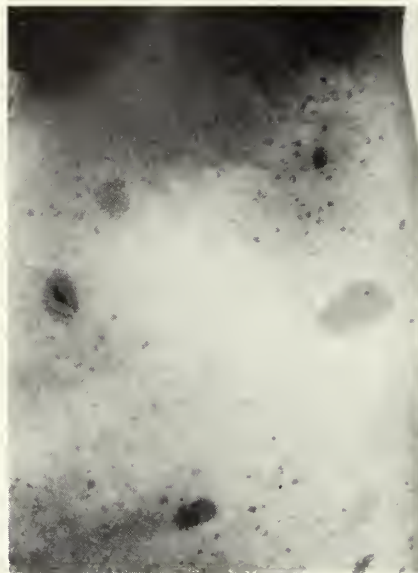


FIGURE 1: Axillary freckles and *cafe-au-laits* in an 11-year-old boy with NF-1.

and soles (Fig. 1). Histologically, they may differ from the hyperpigmented macules seen in normal individuals by the presence of numerous melanin macroglobules.³

As an isolated finding, the presence or absence of *cafe-au-lait* spots cannot be used to make or exclude a diagnosis of neurofibromatosis. Occasionally, individuals with definite NF-1 may not have six or more *cafe-au-lait* spots. Ric-

cardi and Eichner noted that one of their 232 patients with NF-1 did not have *cafe-au-lait* spots.⁴ In our series, two of 81 children with definite NF-1 had fewer than six *cafe-au-lait* spots.⁵ Furthermore, *cafe-au-lait* spots may be seen in both normal individuals and in other conditions. Kopf, *et al.* found that 13.8% of adults had at least one *cafe-au-lait* spot.⁶ In addition, *cafe-au-lait* spots are features of the McCune-Albright syndrome, Russell-Silver syndrome, Bloom syndrome, ataxia-telangiectasia and multiple lentigines syndrome.

A second criterion for diagnosing NF-1 is freckling. Normal freckling may occur in sun exposed areas, but approximately one-third of individuals with NF-1 have freckling in the axillary and inguinal regions (Fig. 1).⁷

Neurofibromas are benign tumors that may be solitary or plexiform. The plexiform neurofibromas consist of interdigitating cords and nodules that have a "bag of worms" character to palpation and often have an overlying orange-reddish pigmentation.⁸ The plexiform neurofibromas may be congenital and tend to grow during the first years of life. When present in an extremity, they can lead to hypertrophy. When present in the face or the neck, they can cause significant disfigurement or life-threatening occlu-



FIGURE 2: Peduncular dermal neurofibroma.

sion of airways. When present over the midline of the vertebral column, spinal cord involvement by the tumor should be suspected.

Solitary neurofibromas are usually of two types, of which the dermal neurofibroma is most characteristic. These are soft, purplish, nonpainful lesions which often can be pushed back through a defect in the dermis (*Fig. 2*). They most commonly appear just before puberty and increase in number and size during the early adult years.

Subcutaneous solitary neurofibromas may involve the peripheral or autonomic nervous system and present as firm round masses along the course of a nerve. They may be painful and cause problems by compression of the nerve or compression of adjacent structures. Dumbbell-shaped neurofibromas may grow through a vertebral foramina, compressing the spinal cord. When present in the abdomen or the pelvis, they may cause abdominal pain, gastrointestinal bleeding or obstruction of the ureters.

Ocular involvement is characteristic of NF-1 and may include iris nodules, sphenoid wing dysplasia and optic gliomas. Iris (Lisch) nodules are virtually unique to NF-1 and are best seen by slit-lamp examination. They are small, approximately 2 mm, and are clear to yellowish-brown, dome-shaped lesions, with distinct borders (*Fig. 3*). The number of iris nodules increases with age. Approximately one-third of children with NF less than 6 years of age will have iris nodules, whereas at least 90% of individuals with NF over the age of 12 years have multiple iris nodules.⁹ They are not troublesome to the patient, but do represent a valuable sign for the diagnosis of NF-1.

Sphenoid wing dysplasia is a congenital lesion that is recognized clinically by enlargement of the orbit. Children most commonly present with a pulsating exophthalmus caused by a forward displacement of the temporal lobe with transmission of normal brain pulsations to the orbit (*Fig. 4*). This can be documented with skull radiographs;

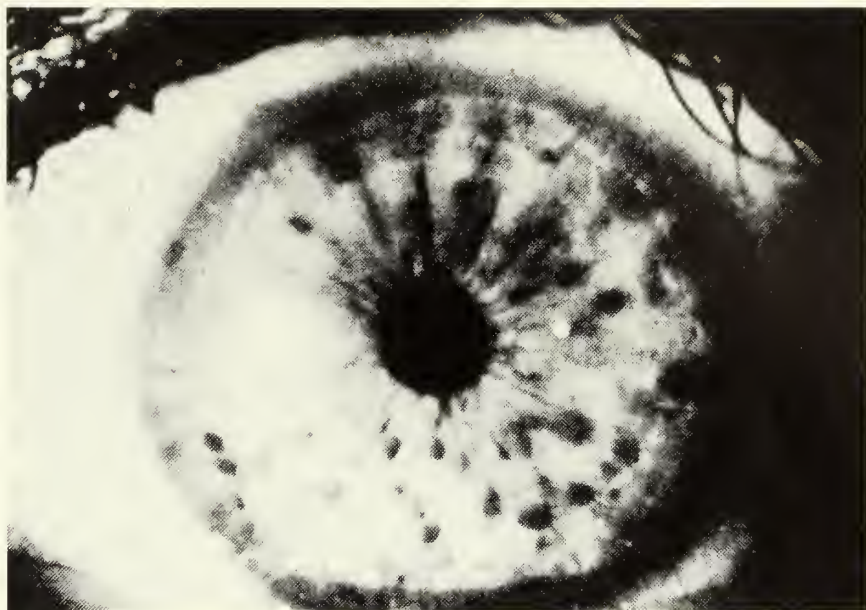


FIGURE 3: Multiple iris nodules in an adult with NF-1 (from Rubenstein AE, Mytilineou C, Yahr MD, Revoltella RP. Neurological aspects of neurofibromatosis. *Adv Neurol* 29:11-21, 1981. Used with permission of Raven Press, New York).

the lesion is most easily appreciated using orbital CT scanning.¹⁰ The exact incidence of this defect is hard to determine but was seen in one of the 81 children in our series.⁵

Optic gliomas are a relatively common feature of NF-1. In one series, 15% of individuals were found to have enlargement of the optic nerve or chiasm, presumably due to a glioma. Two-thirds of the individuals were asymptomatic.¹¹ Symptomatic tumors involving the optic nerve present as proptosis and decreased visual acuity. Lesions involving the chiasm cause headaches, loss of visual field, decreased vision, increased intracranial pressure or failure to thrive from involvement of the diencephalon. These tumors can be diagnosed using either CT scanning or MRI.

The orbital CT scans seem particularly suited for definition of optic nerve lesions (*Fig. 5*). The MRI may give a somewhat better definition of the total extent of optic chiasmal mass lesions. On CT scanning of the orbit,

the optic nerve gliomas are large, swollen, fusiform masses, with kinking and buckling.¹² The optic chiasmal lesions are seen as tubular thickening of the chiasm, a suprasellar mass with extension into either the optic nerves or optic tracts, or a globular suprasellar mass.¹³ There usually is enhancement after contrast (*Fig. 6*). With MRI, these tumors are hypointense to isointense on T1 weighted images and hyperintense on T2 weighted images.¹⁴

Additional ophthalmic manifestations of neurofibromatosis are common. Individuals may have *café-au-lait* spots on the lid, ptosis, plexiform neurofibromas involving the orbit, prominent corneal nerves, choroidal hamartomas, and glaucoma.

Scoliosis and congenital bowing and thinning of the long-bone cortex are orthopedic manifestations of NF. The long-bone changes may affect radius, ulna, femur and clavicle, but the tibia is by far the most commonly involved (*Fig. 7*). The affected child develops a characteristic anterolateral bowing of



FIGURE 4-A: Exophthalmos and downward displacement of the right eye in a 9-year-old girl with NF-1.



FIGURE 4-B: CT scan of the child showing sphenoid wing dysplasia (Reprinted from Dunn Ref. 5).

the lower third of the tibia, usually within the first two years of life. The incidence of this dysplastic lesion has varied from as high as 13% in the series by Crawford¹⁵ to as low as 3% in the series reported by Riccardi⁴ and 4% in our series.⁵

Though not a defining feature of neurofibromatosis, another commonly associated abnormality is scoliosis. This may affect 20-30% of individuals with NF. Two forms of scoliosis are seen, a dysplastic and a nondysplastic form.¹⁵ The nondysplastic form consists of an S-shaped curve similar to that seen in idiopathic scoliosis. In the dysplastic form, there is usually a short, angular scoliotic segment most commonly involving the thoracic region (*Fig. 8*). The dysplastic form may present early in childhood and may progress rapidly. Kyphoscoliosis may occur.

Approximately 5% of individuals with NF-1 are retarded and an additional 30-50% have learning disabilities. Clumsiness and dysarthria often are associated problems. Headaches and seizures not due to tumors of the central nervous system may be

seen in 25% and 5-10% of patients, respectively.¹⁶ Macrocephaly, i.e., head circumference greater than the 95th percentile, is seen in 25% of individuals with neurofibromatosis. Occasionally, this may be associated with enlarged ventricles. Three of the 81 children in our series had hydrocephalus requiring ventricular peritoneal shunting.⁵

In addition to optic gliomas, the most common CNS tumor in individuals with NF-1, 5 to 7% of patients may develop CNS tumors including intracranial meningiomas and astrocytomas and spinal cord meningiomas, gliomas, intradural neurofibromas and schwannomas. Fifteen of 212 patients in Sorensen's series,¹⁷ and six of 81 children in our series had CNS tumors affecting areas other than the optic pathways. Brasfield and DasGupta noted that brain tumors complicating neurofibromatosis were most common in children less than 10 years of age, whereas spinal cord tumors tended to occur between 20-30 years of age.¹⁸

There are innumerable other complications of NF-1. At least three in particular should be mentioned. First, individuals with neurofibromatosis may

have a disturbance of growth. Both short stature and delayed puberty may occur. Riccardi and Eichner found that the average height for their patients with NF fell at the 34.9 percentile.⁴ In our series, we found that 49% of the children with NF were below the 25th percentile for height.⁵

Hypertension is a second important complication of neurofibromatosis. This may occur because of either renal artery stenosis or a pheochromocytoma. The pheochromocytomas are more common in adults, and renal artery stenosis is the usual etiology in children.¹⁹ Vascular stenosis may affect arteries other than the renal artery and can result in occlusive cerebrovascular disease.²⁰ A third major complication of neurofibromatosis is an increased risk of malignancy.²¹

In addition to central nervous system tumors, children with NF-1 have an increased risk of rhabdomyosarcomas, nonlymphocytic leukemia, and neurofibrosarcomas. Adults with neurofibromatosis are at increased risk for both benign central nervous system tumors and malignant neoplasms. In a follow-up of Borberg's series, in-



FIGURE 5: CT scan showing enlargement of the left optic nerve. Seven-year-old girl with normal visual acuity and full visual fields.

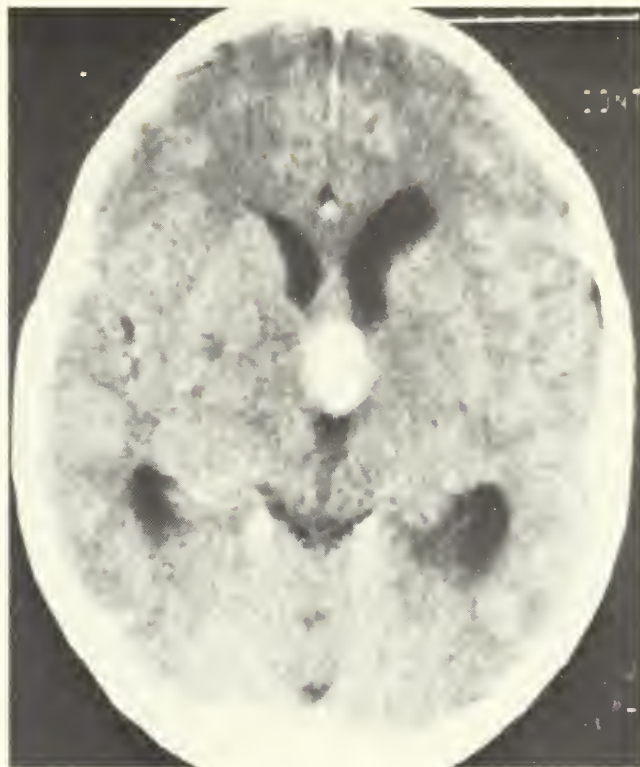


FIGURE 6: CT scan showing an enhancing suprasellar mass causing obstruction of CSF flow. Presumptive diagnosis is optic chiasmal glioma.

dividuals with NF identified through hospital records had a fourfold risk of developing malignant neoplasms or central nervous system tumors.¹⁷ Female relatives with NF had a twofold higher risk and male relatives with NF had the same risk of neoplasms as controls. This seems to suggest that patients with more severe involvement early have the worse prognosis for developing additional complications.

Natural History

Each of the manifestations of neurofibromatosis, as well as the complications, have a characteristic age of onset. During the preschool years, children with NF-1 usually have only *café-au-lait* spots as evidence of their disease. The pediatrician must have a high index of suspicion for the severe though infrequent complications of the

disease that occur in this age group; specifically, bone dysplasia, plexiform neurofibromas and optic nerve tumors. Bone dysplasias, including congenital bowing and thinning of the long-bone cortex of the tibia and fractures with formation of a false joint (pseudoarthrosis), almost invariably appear by 2 years of age. Plexiform neurofibromas may grow at any age, but most commonly present during the preschool years and at this time can be a source of major disability and disfigurement. Optic gliomas, leading to loss of vision, increased intracranial pressure or failure to thrive, are the most common tumor associated with NF-1, and most often present in children under the age of 12 years. Relatively rare complications of NF-1 that occur in this age group are leukemia, rhabdomyosarcomas and Wilm's tumors.

The risk of scoliosis begins to increase as a child reaches elementary school age. It is at this time that the common complications of learning disabilities and behavior disorders are first noted. Iris (Lisch) nodules, which are infrequent in the preschool-age child, begin to appear between 6 and 12 years of age and increase steadily in number.

As the child enters adolescence, cutaneous and subcutaneous neurofibromas begin to appear and increase rapidly in number and size. The adolescent is also at risk for developing hypertension, first from renal artery stenosis and then, as he enters adulthood, from pheochromocytoma.

By the time an individual reaches adulthood, the peripheral manifestations of NF-1, including iris nodules, peripheral and subcutaneous neurofibromas, and axillary or inguinal freck-

ling, are evident. The *cafe-au-lait* spots may begin to fade and are less evident. Many of the major complications of NF-1 in adulthood are secondary to spinal cord or spinal root impingement by neurofibromas, meningiomas or schwannomas. Increasing numbers of cutaneous neurofibromas raise a concern in many individuals for increasing disfigurement. This issue is of special concern to women, as there is an increase in the number and size of cutaneous neurofibromas during pregnancy. Adults with NF-1 are also at increased risk for certain types of malignancies, specifically, neurofibrosarcomas and tumors of the brain.

Initial Evaluation

At the initial evaluation, the emphasis is on confirming the diagnosis, searching for complications and providing counseling. The initial history should include questions of symptoms of central nervous system tumors, including headache, lethargy, weakness, visual problems, or clumsiness. Questions also should be asked about learning difficulties, social problems, constipation and pruritus. Patients should be asked specifically about relatives with "birth marks" or skin nodules, as these individuals may not realize they have neurofibromatosis.

A thorough physical examination is essential for the child or adult with possible NF-1. This should include documentation of numbers of skin lesions, a careful assessment for scoliosis, a measurement of blood pressure and a thorough neurological examination. In addition, children should have a developmental assessment. Children also should be carefully screened for optic nerve gliomas with an assessment of visual acuity and an examination of the fundus. It is our practice to refer adult patients to an ophthalmologist for a slit lamp examination to look for iris nodules.

At the recent NIH Consensus Conference, a recommendation was made to avoid routine laboratory studies. For children with neurofibromatosis, this



FIGURE 7: Persistent pseudoarthrosis after attempted repair with a strut graft.

also has been our policy. Studies are obtained only for evaluation of symptoms or signs. Scoliosis or long bone changes should be studied radiographically. A CT scan or MRI is obtained whenever there is macrocephaly, seizures or headache, decreased visual acuity, a growth disturbance, or other signs of neurologic dysfunction.

The diagnostic studies performed in adults are based on symptoms and the abnormalities detected on the neurological examination. The latter has been particularly helpful in the determination of cervical cord tumors. These are often asymptomatic. Adults with back pain and radicular symptoms are screened with plain radiographs of the spine, EMG/NCV and CT scanning through the level of suspected abnormality. Because of a concern for intracranial malignancies, adults with headaches are routinely screened by MRI. Referral frequently is made to plastic surgery for removal of peripheral and subcutaneous neurofibromas that are painful or disfiguring.

Adequate counseling is essential as there is often a perception that neurofibromatosis is a very severe disorder. Many patients, when informed of their diagnosis, will immediately envision progression to a state of disfigurement and disability as portrayed in the movie, *The Elephant Man*. Patients and families should be informed that this is an autosomal dominant disorder with considerable variability. Approximately two-thirds of individuals with NF-1 have a mild disorder and never develop major disabilities. Half of the remaining third will have more severe, but correctable manifestations, and the other group will have severe and persistent problems. Arrangements should then be made to assess other potentially affected family members and to schedule at least yearly follow-ups.

Genetic evaluation is often helpful. Special clinics devoted to the care of individuals with neurofibromatosis are available in many areas. One such clinic meets twice monthly at Indiana University. Patients also benefit from contact with support groups. Families can contact the National Neurofibromatosis Foundation at 141 Fifth Ave., Suite 7S, New York, N.Y. 10010, or the Indiana Chapter at 2525 W. Washington St., Muncie, Ind. 47303. Both organizations can provide family members with information about this

disorder and can keep them informed of on-going research in this area. In addition, these organizations help relieve the feeling of isolation that affected individuals often have.

Manifestations of NF-2

Bilateral, acoustic neurofibromatosis or NF-2 is distinctly less common than NF-1. Huson and Thrush list a prevalence of 0.1/100,000 for NF-2.²² There does not appear to be any overlap, on a genetic basis, between families with NF-1 and NF-2. Individuals affected with NF-2 may have *café-au-lait* spots, peripheral neurofibromas and CNS tumors; however, iris nodules, bone dysplasias and axillary freckling are not present in NF-2. The major defining difference between NF-1 and NF-2 is the presence of acoustic neuromas. These tumors occur rarely, if ever, in NF-1. They may occur as unilateral tumors in individuals who do not have NF-2; however, almost all individuals with bilateral acoustic neuromas and many individuals with unilateral acoustic neuromas will have NF-2.

Acoustic neuromas are schwannomas that grow on the vestibular portion of the eighth cranial nerve.²³ Decreased hearing is the first symptom of these tumors and this usually occurs during the late teenage or early adult years. These tumors are best treated by surgical resection early in the course, prior to significant injury to the auditory nerve. If an individual with bilateral acoustic neuromas has already lost hearing on one side, the lesion affecting the side with intact hearing should be treated conservatively. It is often best to delay surgery as long as possible and then to attempt only a partial resection with intraoperative, auditory nerve monitoring in an attempt to prevent additional hearing loss.

For the individual at risk for NF-2, the initial history should concentrate on symptoms of auditory or vestibular nerve dysfunction, and symptoms of central nervous system tumors. Although individuals with NF-2 rare-



FIGURE 8: Short segment thoracic scoliosis in a 10-year-old girl with NF-1.

ly have optic nerve gliomas, as many as 20% may develop other CNS tumors, such as gliomas, meningiomas or spinal nerve schwannomas. The physical examination should include a careful search for *café-au-lait* spots and neurofibromas. Forty to fifty percent of individuals with NF-2 will have presenile posterior cataracts.²⁴ The main focus of the examination will be on neurologic and audiologic assessment. These individuals should have repeated studies of eighth cranial nerve function, such as audiograms and brainstem auditory evoked responses (BAER). If there is any evidence of hearing loss, or if the BAER is abnormal, an MRI or CT scan is necessary (Fig. 9). MRI or CT scan also is used whenever there are symptoms or signs of cranial tumors.

These individuals also need counseling. They should be informed of an autosomal dominant nature of this disorder and of the potential for hear-

ing loss and other central nervous system tumors. They will need yearly follow-ups with periodic testing of eighth nerve function. Information on patient support groups is available through the Neurofibromatosis Foundations.

Genetics

A major break-through in the understanding and potential treatment of neurofibromatosis came with the localization of the genes for both NF-1 and NF-2. The gene for NF-1 has been linked to the pericentromeric region of chromosome 17.^{25,26} The gene for NF-2 has been localized to the center of the long arm of chromosome 22.²⁷ Further studies are now in progress to identify more exact DNA markers for both disorders. Once these more exact markers are available, it will be possible to make prenatal or presymptomatic diagnoses, thus facilitating care and follow-up of patients. It should

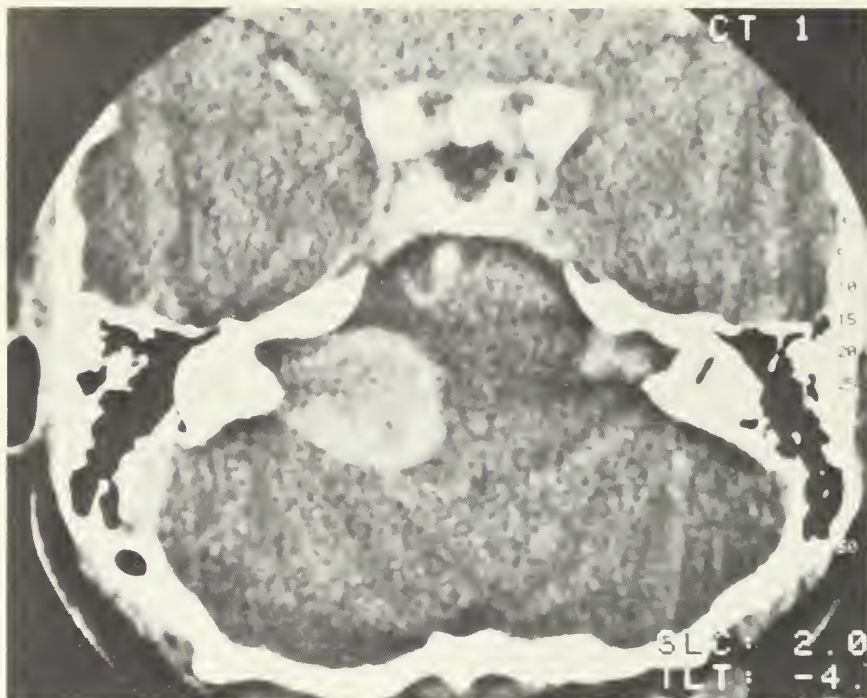


FIGURE 9: CT scan showing a large, enhancing, right acoustic neuroma, and a much smaller left acoustic neuroma.

also be possible to resolve questions about the relationship of certain variants to NF-1 or NF-2. Finally, identification of this gene should allow new understanding of the pathogenesis of both disorders, thus opening a pathway for research into ways to prevent the complications and manifestations of both NF-1 and NF-2.

Biology of NF

In addition to chromosomal studies, present research in neurofibromatosis is concentrating on the biology of the Schwann cell, the role of growth factors, and the expression of oncogenes. Ratner, *et al.* recently identified a proteoglycan present on dorsal root ganglion neurons which stimulate Schwann cell growth.²⁸ It is possible that a similar substance might be the trigger for neurofibroma formation in patients with NF. There has been much enthusiasm for nerve growth factor (NGF) and the biological regulation of this substance.²⁹ There is hope that a consistent abnormality in nerve

growth factors, which would lead to neurofibroma formation, could be identified. This would have obvious therapeutic importance for prevention of tumor growth. Current research also is focusing on the role of other growth factors, including epidermal growth factor and platelet derived growth factors, which may stimulate glial cell growth.

The role of oncogenes, a group of genes that cause development of tumors, also is being studied.³⁰ Rowley, *et al.*, using sarcoma tissue from an individual with NF, were able to demonstrate increased activity of two oncogenes, *sis* and *N-ras*.³¹ Since these oncogenes apparently code for growth factors, it may be possible to develop compounds that interfere with tumor growth.

Present research directed toward understanding the pathogenesis of neurofibromatosis should lead to improvements in care of patients with NF. One recent example was the introduction of ketotifen, a blocker of mast

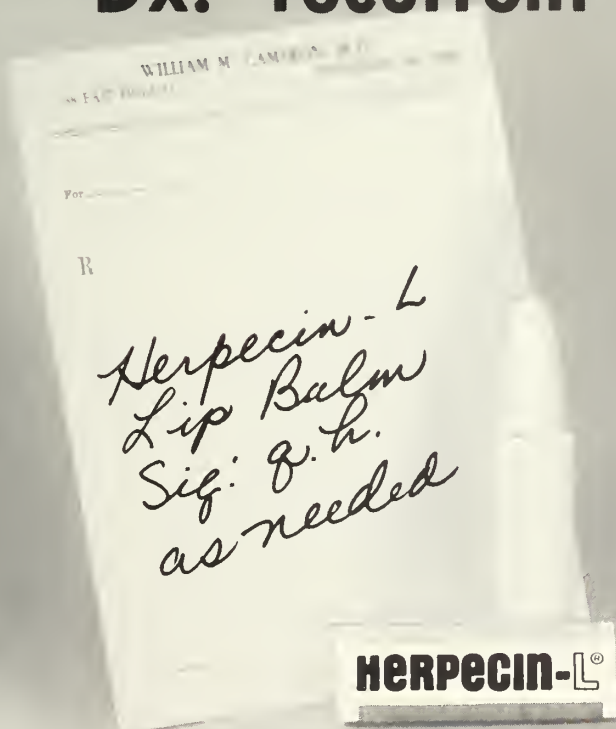
cell secretion. Riccardi reasoned that blocking mast cell action might reduce the growth of neurofibromas. In a preliminary, uncontrolled study, he found that ketotifen leads to decreased growth of neurofibromas, a reduction of pruritus, pain and bleeding from neurofibromas, and an overall improved sense of well-being in patients.³² Continuing research should lead to even more therapeutic advances. In the meantime, the physician treating individuals with NF must continue close individual follow-up of patients, with a goal of providing early diagnosis and prompt treatment for the multiple manifestations and complications of this multisystem disorder.

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Supraventricular Aberrancy



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GARY R. FISCH, M.D.
Indianapolis

THE NORMAL NARROW QRS is an electrical feat that is possible because the AV node is electrically "hot wired" to the entire endocardium by an extensive network of bundle branches and their smaller subdivisions, the Purkinje fibers. This network is a rapid transport system that delivers the electrical impulse from the AV node to the entire inner surface of the heart in a fraction of the time it takes the impulse to move within the myocardium itself. Normally, after being delivered from the AV node, the impulse proceeds simultaneously through the bundle branch system to the endocardium and from there, it expands circumferentially outward from the endocardium toward the epicardium. It is this wavefront migration through the myocardium that inscribes the QRS of the electrocardiogram.

The bundle branches and Purkinje cells are few in number compared to the massive number of myocardial cells. Therefore, depolarization of the bundle branch system, per se, is not sensed and is not recorded on the EKG. The pattern of bundle branch depolarization does shape the QRS, however, since a narrow QRS can occur only with near simultaneous impulse arrival all over the endocardium. If any branch of the bundle system fails to conduct the impulse, impulse arrival to the endocardium dependent on that branch will be delayed. Late impulse arrival to that endocardium will cause delayed invasion of the myocardium. The myocardium must depend instead on depolarizing wavefronts moving slowly through adjacent myocardium to reach it. This myocardial invasion via

aberrant pathways causes the QRS to widen. QRS widening occurs with premature ventricular contractions for a different reason as the impulse originates within the ventricular muscle and depends on slow muscle-cell-to-muscle-cell movement to spread over the ventricle.

A narrow QRS, therefore, suggests that the impulse initiating the heartbeat has a supraventricular origin (i.e., invades the ventricles through the AV node), has utilized the bundle branch system, and that all the electrical pathways of the bundle branch system are both anatomically intact and fully ready to conduct. Being fully ready to conduct means that the bundle branch cell membrane is completely repolarized and that a maximal transmembrane electrical gradient exists. The transmembrane gradient supplies energy to the impulse and, as the oncoming impulse depolarizes the bundle branch cell, the sudden neutralization of that gradient acts as a stimulus to the adjoining cell and propels the impulse along the bundle branches. However, impulse transport is not an all or none phenomenon and, at any given moment, different areas of the bundle branch system may be in differing degrees of readiness. If an impulse encounters an area of bundle branch that is still repolarizing, it will find a submaximal transmembrane gradient. With less potential energy available to move the impulse forward, the impulse will decelerate. As it slows, it loses momentum, and it may do so to the point where it extinguishes. This phenomenon is termed decremental conduction. Aberration, i.e., bizarre QRS widening of a supraventricular impulse, therefore, is going to occur whenever a normally conducting impulse encounters an incompletely recovered area in the bundle branches.

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Cellular energy is consumed in the process of generating a transmembrane gradient and, more importantly, in maintaining it. The longer the bundle branch cells are expending energy maintaining the transmembrane gradient, the longer the cells will take to recover their ability to conduct in the wake of a passing impulse. Clinically, this means that the slower the heart rate, as reflected by a longer QRS-QRS interval, the longer it will take the bundle branches to recover their ability to conduct. An early supraventricular impulse, therefore, such as a premature atrial complex, may encounter an incompletely repolarized bundle branch system and, if so, slowing or complete failure of the premature impulse to conduct along a bundle may result. Slowing of a similar degree down both the right and left bundle branches will produce a longer PR interval, but the QRS duration will remain normal, since impulse arrival to the endocardium will still be uniform, though delayed. For unknown reasons, however, the right bundle branch is slower to restore its transmembrane gradient (repolarize) than the left bundle branch. Early impulses arriving at the bundle branches, finding the right bundle less recovered, will therefore tend to decelerate more down it. Staggered arrival of the impulse to the endocardium, because of unequal speed of impulse conduction in the bundle branches, will result in a widening of the QRS, usually with a right bundle branch block pattern. A right bundle branch block pattern, therefore, may be the result of impulse delay rather than block. For example, a 40 millisecond (0.04 sec.) delay in the conduction time of the right bundle branch as compared with the left bundle branch will result in a right bundle branch block pattern, even though there was no actual block of conduction.

Specific Forms of Aberration

There are four common manifestations of aberration:

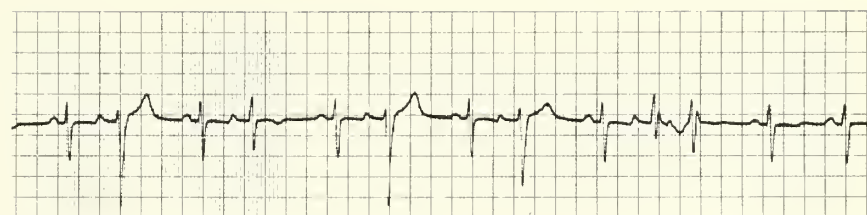


FIGURE 1: Atrial premature complexes with varying degrees of aberration.

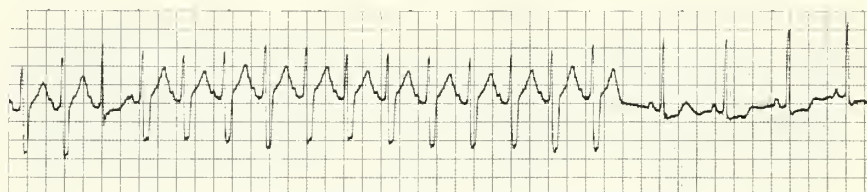


FIGURE 2: Acceleration dependent aberration and supernormality. (See text for discussion.)

1. Aberration due to the Ashman phenomenon
2. Acceleration dependent aberration
3. Deceleration dependent aberration
4. Concealed transseptal conduction.

Aberration is important to recognize lest its wide QRS be misinterpreted as a ventricular arrhythmia.

1. Aberration due to the Ashman phenomenon describes the bizarre widening that is seen with premature supraventricular complexes (*Fig. 1*). It will occur in the normal heart whenever the dominant rhythm (e.g., sinus rhythm) is slow enough that a premature supraventricular impulse—be it an atrial premature complex, junctional premature complex, or an early atrial fibrillation or flutter impulse—finds the right bundle branch still recovering and able to only slowly conduct. For such a situation to exist, the premature impulse will have to arrive at the bundle branches on the heels of the preceding impulse, creating a sudden shortening of the QRS-QRS interval. A long-short QRS-QRS interval, therefore, classically characterizes Ashman aberration.

Impulse deceleration in the right bundle branch results in QRS widening with a right bundle branch block

pattern. Similarly, premature impulse arrival at a partially repolarized AV node results in impulse deceleration within the AV node which manifests on the EKG as PR prolongation. Thus, the same phenomenon—impulse deceleration in partially repolarized conducting tissue—is responsible for both the PR prolongation and right bundle branch aberration frequently seen with atrial premature complexes.

2. Acceleration dependent aberration—With increasing heart rate and shortening QRS-QRS interval, there is physiological shortening of the duration of repolarization of the bundle branches. Encroachment on bundle branch repolarization at high heart rates may occur, however, and will result in impulse deceleration and QRS widening. Thus, acceleration dependent aberration developing at rapid heart rates also usually produces a right bundle block pattern, since the right bundle is slower to completely recover ability to conduct. The syndrome of acceleration dependent aberration may also affect the left bundle and, surprisingly, at heart rates as slow as 70-75. *Figure 2* illustrates acceleration dependent aberration from a supraventricular focus. The unexpected single normal width QRS, interestingly, may represent supernormal conduction in the right bundle



FIGURE 3: Deceleration dependent aberration.

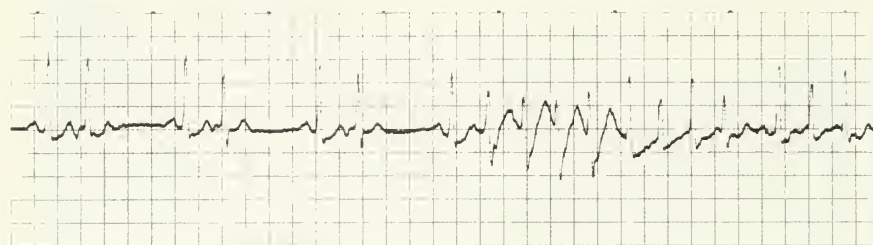


FIGURE 4: Ashman phenomenon and aberration due to concealed transseptal conduction.

branch. The supernormal period is a very brief time span in repolarization, during which an oncoming impulse is conducted at greater than expected speed. In this instance, as a result of supernormal conduction, the right bundle impulse arrives at its ventricular endocardium earlier than expected, "on time" with the left bundle branch impulse, and the QRS width is normal.

3. Deceleration dependent aberration—Gradual loss of the resting bundle branch cell transmembrane gradient will result in deceleration dependent aberration. In diseased bundle branch cells, the transmembrane gradient decays as the bundle branch sits idle. Given a long enough time, the transmembrane gradient will decay to the point where impulse conduction fails completely. Deceleration dependent aberration presents as unexpected wide QRS complexes during a slow supraventricular rhythm (*Figure 3*).

4. Concealed transseptal conduction is the cause of a series of aberrant QRS

complexes frequently seen immediately following aberration due to the Ashman phenomenon (*Figure 4*). When an impulse, because of its prematurity, decelerates in the proximal right bundle to the extent that it extinguishes, the remaining right bundle distal to the point of impulse death may be depolarized by a wavefront moving rapidly down the left bundle and then slowly from the left side of the septum across to the right side of the septum, where the right bundle lies. Wavefront movement through septal muscle—like through all myocardial muscle—is slow. As a result, right bundle branch depolarization will be late compared to the left bundle branch depolarization. Normally, right bundle branch repolarization extends timewise beyond left bundle branch repolarization, and, with the late onset of right bundle branch depolarization, the completion of right bundle branch repolarization is even more delayed. Furthermore, the delay in initiation of right bundle branch depolarization creates a lengthening of

the time interval from the previous right bundle branch depolarization. This lengthened right bundle branch depolarization—right bundle branch depolarization interval physiologically prolongs the duration of the right bundle branch repolarization. Therefore, whenever late right bundle branch depolarization by transseptal conduction has occurred, any premature impulse that follows—unless it is very late compared to the transseptal impulse—has a good chance of failing in the right bundle branch. This happens because the impulse finds the late-depolarized right bundle branch still unrecovered and, therefore, refractory to conduction. This cycle of right bundle conduction failure, left to right transseptal conduction, and late right bundle depolarization will recur with each premature impulse, until either transseptal conduction fails, or a pause occurs that is long enough to allow the late depolarized right bundle enough time to fully recover. Transseptal conduction is called "concealed" because it does not record on the EKG as it occurs, but manifests itself instead in the unexpected perpetuation of right bundle branch aberration in the QRS complex that follows.

In summary, a narrow QRS suggests that the impulse is of supraventricular origin and that the bundle branch conduction system is utilized and fully functional. Supraventricular impulses may have a wide QRS despite traversing an anatomically intact conduction system if slowing of conduction, for reasons discussed above, has occurred in a portion of the bundle branch system. Aberration is important to distinguish from ventricular arrhythmia since it is transient, in itself, harmless and, as such, requires no treatment.



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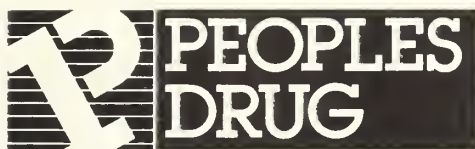
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- If your blood pressure is high, consult a physician.
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- Reduce salt intake.
- Reduce alcohol consumption.
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- Exercise regularly for at least 20 minutes three times a week.
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And remember, after deciding on Bactrim, protect your decision. Take an extra half-second, in accordance with your state regulations, to prevent substitution.

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(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

Bactrim™ Pediatric

(40 mg trimethoprim and
200 mg sulfamethoxazole per 5 ml)



Please see summary of product information on following page.

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Before prescribing, please consult complete product information, a summary of which follows:

CONTRAINDICATIONS: Hypersensitivity to trimethoprim or sulfonamides, documented megaloblastic anemia due to folate deficiency, pregnancy at term and during the nursing period, infants less than two months of age.

WARNINGS: FATALITIES ASSOCIATED WITH THE ADMINISTRATION OF SULFONAMIDES, ALTHOUGH RARE, HAVE OCCURRED DUE TO SEVERE REACTIONS, INCLUDING STEVENS-JOHNSON SYNDROME, TOXIC EPIDERMAL NECROLYSIS, FULMINANT HEPATIC NECROSIS, AGRANULOCYTOSIS, APLASTIC ANEMIA AND OTHER BLOOD DYSCRASIAS.

BACTRIM SHOULD BE DISCONTINUED AT THE FIRST APPEARANCE OF SKIN RASH OR ANY SIGN OF ADVERSE REACTION. Clinical signs, such as rash, sore throat, fever, pallor, purpura or jaundice, may be early indications of serious reactions. In rare instances a skin rash may be followed by more severe reactions, such as Stevens-Johnson syndrome, toxic epidermal necrolysis, hepatic necrosis or serious blood disorder. Perform complete blood counts frequently.

BACTRIM SHOULD NOT BE USED IN THE TREATMENT OF STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have a greater incidence of bacteriologic failure when treated with Bactrim than with penicillin.

PRECAUTIONS: General: Give with caution to patients with impaired renal or hepatic function, possible folate deficiency (e.g., elderly, chronic alcoholics, patients on anticonvulsants, with malabsorption syndrome or in malnutrition states) and severe allergies or bronchial asthma. In glucose-6-phosphate dehydrogenase deficient individuals, hemolysis may occur. Frequently dose-related.

Use in the Elderly: May be increased risk of severe adverse reactions in elderly, particularly with complicating conditions, e.g., impaired kidney and/or liver function, concomitant use of other drugs. Severe skin reactions, generalized bone marrow suppression (see WARNINGS and ADVERSE REACTIONS) or a specific decrease in platelets (with or without purpura) are most frequently reported severe adverse reactions in elderly. In those concurrently receiving certain diuretics, primarily thiazides, increased incidence of thrombocytopenia with purpura reported. Make appropriate dosage adjustments for patients with impaired kidney function (see DOSAGE AND ADMINISTRATION).

Use in the Treatment of Pneumocystis Carinii Pneumonitis in Patients with Acquired Immunodeficiency Syndrome (AIDS): Because of unique immune dysfunction, AIDS patients may not tolerate or respond to Bactrim in same manner as non-AIDS patients. Incidence of side effects, particularly rash, fever, leukopenia, with Bactrim in AIDS patients treated for *Pneumocystis carinii* pneumonitis reported to be greatly increased compared with incidence normally associated with Bactrim in non-AIDS patients.

Information for Patients: Instruct patients to maintain adequate fluid intake to prevent crystalluria and stone formation.

Laboratory Tests: Perform complete blood counts frequently, if a significant reduction in the count of any formed blood element is noted, discontinue Bactrim. Perform urinalyses with careful microscopic examination and renal function tests during therapy, particularly for patients with impaired renal function.

Drug Interactions: In elderly patients concurrently receiving certain diuretics, primarily thiazides, an increased incidence of thrombocytopenia with purpura has been reported. Bactrim may prolong the prothrombin time in patients who are receiving the anticoagulant warfarin. Keep this in mind when Bactrim is given to patients already on anticoagulant therapy and reassess coagulation time. Bactrim may inhibit the hepatic metabolism of phenytoin. Given at a common clinical dosage, it increased the phenytoin half-life by 39% and decreased the phenytoin metabolic clearance rate by 27%. When giving these drugs concurrently be alert for possible excessive phenytoin effect. Sulfonamides can displace methotrexate from plasma protein binding sites, thus increasing free methotrexate concentrations.

Drug/Laboratory Test Interactions: Bactrim, specifically the trimethoprim component, can interfere with a serum methotrexate assay as determined by the competitive binding protein technique (CBPA) when a bacterial dihydrofolate reductase is used as the binding protein. No interference occurs if methotrexate is measured by a radioimmunoassay (RIA). The presence of trimethoprim and sulfamethoxazole may also interfere with the Jaffe alkaline picrate reaction assay for creatinine, resulting in overestimations of about 10% in the range of normal values.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Carcinogenesis: Long-term studies in animals to evaluate carcinogenic potential not conducted with Bactrim. Mutagenesis: Bacterial mutagenic studies not performed with sulfamethoxazole and trimethoprim in combination. Trimethoprim demonstrated to be nonmutagenic in the Ames assay. No chromosomal damage observed in human leukocytes *in vitro* with sulfamethoxazole and trimethoprim alone or in combination, concentrations used exceeded blood levels of these compounds following therapy with Bactrim. Observations of leukocytes obtained from patients treated with Bactrim revealed no chromosomal abnormalities. **Impairment of Fertility:** No adverse effects on fertility or general reproductive performance observed in rats given oral dosages as high as 70 mg/kg/day trimethoprim plus 350 mg/kg/day sulfamethoxazole.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Trimethoprim and sulfamethoxazole may interfere with folate acid metabolism, use during pregnancy only if potential benefit justifies potential risk to fetus. Nonteratogenic Effects: See CONTRAINDICATIONS section.

Nursing Mothers: See CONTRAINDICATIONS section.

Pediatric Use: Not recommended for infants under two months (see INDICATIONS and CONTRAINDICATIONS sections).

ADVERSE REACTIONS: Most common are gastrointestinal disturbances (nausea, vomiting, anorexia) and allergic skin reactions (such as rash and urticaria). **FATALITIES ASSOCIATED WITH THE ADMINISTRATION OF SULFONAMIDES, ALTHOUGH RARE, HAVE OCCURRED DUE TO SEVERE REACTIONS, INCLUDING STEVENS-JOHNSON SYNDROME, TOXIC EPIDERMAL NECROLYSIS, FULMINANT HEPATIC NECROSIS, AGRANULOCYTOSIS, APLASTIC ANEMIA AND OTHER BLOOD DYSCRASIAS (see WARNINGS SECTION).**

Hematologic: Agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, neutropenia, hemolytic anemia, megaloblastic anemia, hypoprothrombinemia, methemoglobinemia, eosinophilia. **Allergic Reactions:** Stevens-Johnson syndrome, toxic epidermal necrolysis, anaphylaxis, allergic myocarditis, erythema multiforme, exfoliative dermatitis, angioedema, drug fever, chills, Henoch-Schoenlein purpura, serum sickness-like syndrome, generalized allergic reactions, generalized skin eruptions, photosensitivity, conjunctival and scleral injection, pruritus, urticaria and rash. **Perianteritis nodosa** and systemic lupus erythematosus have been reported. **Gastrointestinal:** Hepatitis (including cholestatic jaundice and hepatic necrosis), elevation of serum transaminase and bilirubin, pseudomembranous enterocolitis, pancreatitis, stomatitis, glossitis, nausea, emesis, abdominal pain, diarrhea, anorexia. **Genitourinary:** Renal failure, interstitial nephritis, BUN and serum creatinine elevation, toxic nephrosis with oliguria and anuria, crystalluria. **Neurologic:** Aseptic meningitis, convulsions, peripheral neuritis, ataxia, vertigo, innitulus, headache. **Psychiatric:** Hallucinations, depression, apathy, nervousness. **Endocrine:** Sulfonamides bear certain chemical similarities to some gonadotropins, diuretics (acetazolamide and the thiazides) and oral hypoglycemic agents; cross-sensitivity may exist. Diuresis and hypoglycemia have occurred rarely in patients receiving sulfonamides. **Musculoskeletal:** Arthralgia, myalgia. **Miscellaneous:** Weakness, fatigue, insomnia.

DOSAGE AND ADMINISTRATION: Not recommended for use in infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN AND ACUTE OTITIS MEDIA IN CHILDREN: Usual adult dosage for urinary tract infections is one OS tablet, two tablets or four teaspoonfuls (20 ml) b.i.d. for 10 to 14 days. Use identical daily dosage for 5 days for shigellosis. Recommended dosage for children with urinary tract infections or acute otitis media is 5 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses every 12 hours for 10 days. Use identical daily dosage for 5 days for shigellosis. **Renal Impaired:** Creatinine clearance above 30 ml/min, give usual dosage, 15-30 ml/min, give one-half the usual regimen, below 15 ml/min, use not recommended. **ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:** Usual adult dosage is one OS tablet, two tablets or four teasp (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS: Recommended dosage is 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

HOW SUPPLIED: OS (double strength) Tablets (160 mg trimethoprim and 800 mg sulfamethoxazole)—bottles of 100, 250 and 500. Tel-E-Dose® packages of 100, Prescription Paks of 20, Tablets (80 mg trimethoprim and 400 mg sulfamethoxazole)—bottles of 100 and 500; Tel-E-Dose® packages of 100, Prescription Paks of 40. **Pediatric Suspension:** (40 mg trimethoprim and 200 mg sulfamethoxazole per teasp)—bottles of 100 ml and 16 oz (1 pint). **Suspension:** (40 mg trimethoprim and 200 mg sulfamethoxazole per teasp)—bottles of 16 oz (1 pint).

STORE TABLETS AT 15°-30°C (59°-86°F) IN A DRY PLACE PROTECTED FROM LIGHT. STORE SUSPENSIONS AT 15°-30°C (59°-86°F) PROTECTED FROM LIGHT.

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YOCON®

YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubiaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by β -adrenergic receptors. Its effect on blood pressure, if any, would be to lower it, however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral α -adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

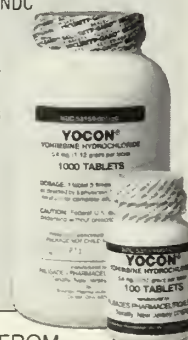
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85
3. Weekly Urological Clinical letter, 27, 2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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BRONCHIOLITIS

Experience at Methodist Hospital of Indiana, 1981-1986

Second Prize Winner, Resident Medical Society Essay Contest

JAMES E. JENISON, M.D.
Indianapolis

BRONCHIOLITIS CAN be defined as inflammation of the smallest bronchial tubes resulting in edema and cellular infiltration of the bronchioles and the alveolar ducts. It is one of the major causes of hospitalization for children under 6 months of age. After an incubation period of four to five days, the infant characteristically develops signs of an upper respiratory tract infection with mild rhinorrhea, cough and sometimes low grade fever. Within a few days the patient progresses to symptoms of lower tract disease with tachypnea, retractions, wheezing and rales. Wheezing helps differentiate bronchiolitis from other forms of respiratory distress in an infant. The symptoms are a direct consequence of small airway obstruction from sloughed viral infected cells. The infant becomes irritable, feeds poorly and occasionally vomits. The majority of infants recover, but in some the disease progresses to respiratory failure and death.

The major etiologic agent responsi-

Abstract

Between the years 1981 and 1986 over 250 children were hospitalized at Methodist Hospital in Indianapolis, Indiana with the diagnosis of bronchiolitis. This paper reviews the current literature and the clinical experience on the diagnosis, management and therapy of bronchiolitis based on our experience.

ble for this clinical entity is respiratory syncytial virus (RSV). The disease enjoys worldwide distribution. In the United States alone, over 800,000 infants are affected by RSV infections annually. Of those, 12 to 18% are hospitalized, accounting for over 100,000 admissions; of these, there are about 5,000 deaths. A number of investigators have linked RSV epidemiologically to Sudden Infant Death Syndrome. It is well documented that many infants with RSV bronchiolitis die suddenly and unexpectedly. Another frequent observation is that apneic episodes are a common manifestation of RSV infections, especially in those born prematurely. Of the 250 patients admitted to Methodist, 34 required admission to the Pediatric Intensive Care Unit.

History of Disease

The first description of viral pneumonia in children was published by Goodpasture in 1939. Subsequently, Adams reported the occurrence of pneumonia in 32 infants, with nine associated deaths in January, February and March of 1937. This outbreak took place in a hospital newborn nursery and was characterized by

cough, tachypnea and cyanosis. This was probably the first detailed description of RSV bronchiolitis. The respiratory syncytial virus was first isolated in 1956 from a colony of chimpanzees with an outbreak of an upper respiratory illness. The virus was named chimpanzee coryza virus. The next year in Baltimore an identical virus was isolated and was renamed respiratory syncytial virus.

Epidemiology

The epidemiology of the RSV infections is unique. No other respiratory virus causes extensive yearly epidemics, with the most severe morbidity being in infants under 6 months of age. Seventy-eight percent of 250 cases at Methodist were 6 months of age or younger, with the highest percentage seen at 2 months of age (24.8%) and at 3 months (18%). The infection occurs in seasonal epidemics in the winter months. Data from the last 10 years from 16 university viral laboratories show the average initial outbreak month to be December; peak outbreak month to be January; and duration of the outbreak to be two to four months.

At Methodist, from 1981-1986, we made similar observations with peak admissions in January of all years, except in 1985 when our peak admissions occurred in March. The infection occurs in seasonal epidemics in the winter months. It is estimated that 50% of children under 1 year of age are infected with RSV during an epidemic. Of particular concern is the potential for nosocomial transmission to infants and children at greatest risk for severe morbidity, such as those with compromised pulmonary, cardiac or im-

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mune status. A mortality as high as 37% has been seen in patients with congenital heart disease.

Although the spread of RSV had been thought to be primarily by respiratory droplet, recent evidence points to hand-to-nose transmission of respiratory secretions. Direct contact with the baby or his clothing greatly facilitates acquisition of the virus. Fifty percent of family contacts and hospital personnel contacts will acquire a respiratory illness; in hospitalized patients, attack rates of 30% are seen in other children on the same ward. Almost all infants who have lived through two annual outbreaks have been infected with RSV. Observing strict handwashing practices and cohorting infants and staff can reduce the rate of transmission to other children on the same ward. RSV continues to be shed from the respiratory tract for an average of 10 days in children less than 1 year of age; in some infants, especially those who are immunocompromised, RSV may be shed for months.

Pathogenesis

RSV is a medium-sized ribonucleic acid (RNA) virus whose growth is limited to the respiratory tract epithelium. Upon entering a cell the virus replicates over a 12-hour period and then buds from the plasma membrane. These viral glycoproteins that bud through the plasma membrane are probably the major viral antigens recognized by the host, and are responsible for the host antibodies that are detected by the rapid DFA (Direct Fluorescent Antibody) test. Included in the viral glycoprotein is a fusion protein that allows for cell membranes to fuse, forming intracellular bridges and, ultimately, giant multinucleated cells or syncytia.

The initial infection results from viral replication in the epithelial cells of the upper respiratory tract. In adults and older children the infection most often spreads no further. In about 50% of children less than 8 months of

age, the virus spreads to the lower respiratory tract—the bronchi, the bronchioles and even the pulmonary parenchyma. In the lower respiratory tract the RSV results in necrosis of the respiratory epithelium and destruction of the respiratory epithelial cells. Submucosal edema occurs and the bronchioles are plugged with cellular debris and fibrin. There is increased produc-

RSV Infections Affect 800,000 Infants in the U.S. Each Year; of Those, 12-18% Require Hospitalization . . .

tion of mucus with proliferation of goblet cells. Recovery from acute bronchiolitis begins with regeneration of the bronchiolar epithelium after three or four days, but cilia do not appear until later, about 15 days. Macrophages then remove the mucus plugs.

The combination of submucosal edema, bronchiolar plugging and cellular debris results in abnormal respiration. The infant breathes at high lung volumes and doubles his functional residual capacity. Pulmonary dynamic compliance is decreased and airway resistance is increased, which substantially increases the patient's work of breathing. Ventilation-perfusion mismatching occurs as a result of airway obstruction and atelectasis, and this results in arterial hypoxemia and, in some severe cases, carbon dioxide retention.

The respiratory rate is increased and can be used as an indirect measure of impaired gas exchange. At a respiratory rate of 40 per minute, an arterial PO_2 of 80 mmHg would be predicted. A PO_2 of 70 mmHg is often seen when the respiratory rate approaches 50 breaths per minute, and with a respiratory rate of 60 breaths per minute the PO_2 CXR reveals

evidence of hyperexpansion of the lungs, thickening of the bronchial walls, atelectasis and interstitial pneumonia. Autopsy examinations of patients who have died from RSV infection show severe necrotizing lesions of the bronchi and bronchioles, interstitial pneumonia consisting of mononuclear infiltrates, patchy atelectasis and emphysema.

Diagnosis

The diagnosis of acute RSV bronchiolitis is suggested by the clinical presentation, age of the child and the presence of an RSV epidemic in the community. In the recent past rapid diagnosis was possible only in large tertiary hospitals. Research and development has now made rapid diagnosis of RSV possible in most laboratories in the U.S. Viral identification can be performed rapidly on nasal secretions or tracheal aspirates using immunofluorescent techniques. At Methodist, results are available within 24 hours, and often within four hours.

Other causes of retractions, wheezing and airway obstruction should be considered and ruled out with careful physical, laboratory and radiologic examination. Differential diagnosis includes obstruction of the nasopharynx by retropharyngeal abscess or hypertrophied adenoids, laryngeal obstruction caused by abnormalities of the larynx, croup or a foreign body. Salicylate poisoning is a consideration and can mimic bronchiolitis. Congestive heart failure secondary to a congenital defect or viral myocarditis has a similar clinical presentation. The chest x-ray may be normal or may show perihilar thickening, patchy atelectasis, segmental collapse or hyperinflation. The WBC ranges from 5,000 to 24,000. Other viruses to be considered include parainfluenza virus types 1, 2 and 3, adenovirus, influenza virus, rhinovirus, mycoplasma, pneumocystis and chlamydia. Fever is often not helpful since more than 50% of patients with RSV will have a temperature of 39.5°C or greater.

Therapy

Until recently, there has been no specific treatment of bronchiolitis. Therapeutic intervention in the past was reduced to symptomatic treatment while awaiting the disease to run its course. Supportive therapy includes hospitalization, oxygen, cool mist, Tylenol, and bronchodilators. The following will list the rationale and general guidelines that I have used in the treatment of bronchiolitis at Methodist Hospital.

The first intervention when presented with a patient who meets clinical criteria for bronchiolitis is whether the patient needs hospitalization or not. Observation of the patient's respiratory rate when undisturbed can be helpful in making the decision. As previously mentioned, the respiratory rate inversely correlates with the arterial PO_2 . With a respiratory rate of 40 per minute or greater, the patient's PO_2 on room air is less than 80 mmHg. This gives little room for desaturation with stress. With respiratory rates of 50 per minute or greater, carbon dioxide retention is likely to occur and, with respiratory rates greater than 60 per minute, the PO_2 falls to less than 60 mmHg. Patients with respiratory rate in the 50s or 60s should be admitted and placed on oxygen and apnea monitors secondary to their risk of hypoxia and the well-recognized increase in apneic episodes in RSV infections. From February 1981 through March 1986, 250 children were admitted to Methodist Hospital with the diagnosis of bronchiolitis, accounting for 1,292 patient days in the hospital. The average length of stay was 5.1 days. For those children requiring hospitalization in the Pediatric Intensive Care Unit, the average length of stay was 12.2 days.

Oxygen is another important therapeutic intervention. Supplemental oxygen should be given in all but the mildest cases of bronchiolitis. Forty percent FIO_2 has been found to correct most but not all cases of hypoxemia, but confirmation of adequate oxygena-

tion should be obtained by pulse oximetry or arterial blood gas sampling. Oxygen is provided most commonly by oxygen hood; if the patient is not too tachypneic, he can be nipple-fed with 2-4 liters of oxygen per nasal canula.

In infants with no history of chronic lung disease, oxygen can be safely administered without fear of CO_2 retention. It is important to note that, with the increased numbers of neonatal nursery survivors, there is an increased number of patients with bronchopulmonary dysplasia and at high risk

Deciding Whether or Not a Patient Suspected of Having Bronchiolitis Needs Hospitalization Is the First Step in Therapeutic Intervention

for CO_2 retention. This is important to determine during the admitting history. Ventilatory assistance may be needed in patients whose respiratory rate is in the 80s and 90s, who have CO_2 retention approaching 55-60 mmHg, or whose pH is dropping to about 7.2. Orotracheal intubation is initially performed but, if possible, the airway should be changed to a nasotracheal tube to allow for better stabilization of the airway. This will decrease the risk of laryngotracheal trauma and accidental extubation.

Cool mist therapy has not proven beneficial in almost all studies primarily because the water molecules are so large that they are deposited in the proximal airway and provide little help in liquifying the secretions in the distal small bronchioles. Fever requires aggressive treatment in patients with bronchiolitis because of its resultant increase in oxygen consumption. Acetaminophen in a dose of 15 mg/kg should be administered every three to four hours.

Antibiotic therapy remains an area of controversy in the treatment of bronchiolitis. In general, routine use of antibiotic therapy has not been shown to alter the clinical course. Lack of ability to detect RSV, uncertainty about the cause of respiratory distress in a severely ill infant, and the concern of viral infection predisposing the patient to bacterial super-infection have been reasons for antibiotic use in the past. In the desperately ill child, in the child for whom there is more than the usual uncertainty of a viral vs. a bacterial etiology, and in the child whose condition suddenly deteriorates, antibiotic therapy is considered.

Dr. Fries of the Department of Pediatrics at the University of Copenhagen reports a prospective double-blind, randomized study of antibiotic empiric therapy in 136 children admitted for bronchiolitis. Eighty-four percent of those patients were identified as having an RSV infection. The results did not show a significant improvement in the infants who received antibiotic therapy. Elevations in white blood cell counts and fever were not helpful in identifying those with bacterial infection. In our institution ampicillin and gentamycin have been the most commonly used antibiotics in the past, but with the increase in resistance to ampicillin, especially in *Hemophilus* organisms, we have begun to use the second and third generation cephalosporins more. When antibiotics are given in the situations mentioned above, cultures are obtained from the blood, urine and sputum for viral and bacterial studies and the antibiotics are continued 48 to 72 hours while awaiting the culture results.

Bronchodilator therapy is another mode of therapeutic intervention that is used in bronchiolitis. The relative importance of mechanical obstruction secondary to edema, accumulated secretions, and cellular debris and of potentially reversible smooth muscle contraction is unknown. Most studies indicate that bronchiolitis in children younger than 18 months of age does not

respond to bronchodilator therapy. Soto, *et al* reported their results of the effects of bronchodilator therapy in infants with RSV infections where they found that 30% of the infants responded to aerosolized beta-agonists. These data suggest that, when faced with a patient with bronchiolitis, aerosol therapy should be tried and treatment continued based on the initial response. The medications that we routinely use are Alupent aerosol solution at 0.01 cc/kg/dose or Bronkosol solution at 0.02 cc/kg/dose as often as every two to four hours.

Aminophylline is another possible therapeutic agent used in some cases of bronchiolitis. The potential benefits of this drug include bronchodilation, increasing brainstem sensitivity to carbon dioxide levels and strengthening diaphragmatic contractility. These benefits must be weighed against the difficulty in predicting the clearance of this drug in the child under 1 year of age with its risk of toxic serum levels and subsequent neurologic sequelae. Results of pharmacokinetics studied in both premature infants and term infants demonstrate up to a fivefold individual variability in theophylline clearance rates, resulting in theophylline levels varying from 10-41 mcg/ml after doses as low as 12 mg/kg. As a result of the above findings we have adopted a conservative approach to the use of theophylline in infants. We follow the FDA recommendations that were published in the FDA Drug Bulletin in August 1985. Maintenance doses should not be continued or exceeded unless well-tolerated and clinically beneficial. Serum concentrations should be kept below 20 mcg/ml for infants and 10 mcg/ml for neonates.

The loading dose that we use (when clinically indicated) is 1 mg/kg of body weight for each 2 mcg/ml increase in the serum theophylline concentration desired. The initial maintenance dose in a preterm infant up to 40 weeks post-conception age is 1.0 mg/kg q 12 hrs (postconception age = gestational age at birth + postnatal age). The initial

maintenance dose for term infants (either at birth or 40 weeks postconception) up to 4 weeks postnatal is 1-2 mg/kg q 8 hrs; for those from 4 to 8 weeks the dose is 1-2 mg/kg q 8 hrs; and the dose for those beyond 8 weeks is 1-3 mg/kg q 6 hrs. The final maintenance dosage and dosage interval should be guided by theophylline serum concentrations obtained after steady state has been achieved.

Antiviral Therapy—Ribavirin

In 1970 two scientists working at the ICN Pharmaceuticals Nucleic Acid Research Institute first synthesized a new compound that was found to be the first broad-spectrum antiviral drug, Ribavirin. Ribavirin was released for general use in 1985. In multiple studies it has been shown to be effective against influenza virus, respiratory syncytial virus, parainfluenza virus and possibly the AIDS virus.

Although the detailed mechanisms of antiviral action is not completely understood, Ribavirin appears to inhibit reading of viral messenger (RNA) in the cell, dramatically slowing the rate at which the virus is able to replicate. By interfering with the formation of viral proteins, the replication of new virions is slowed to the point that the patient's own immune system is able to overcome the infection. In all the clinical trials no viral resistance has developed.

Ribavirin is administered as an aerosol through a Small Particle Aerosol Generator (SPAG 2), which uses compressed air to turn the Ribavirin solution into a fine particle mist that is delivered deep into the lungs, directly to the site of the RSV infection. The patient receives the mist directly through an oxygen mask or hood. At Methodist Hospital we will occasionally administer the Ribavirin through a ventilator to patients who present to our Pediatric Intensive Care Unit already in complete respiratory failure. This should be done in centers experienced in this form of Ribavirin treatment because of the case reports

of increased peak inflating pressure secondary to gummed up filters and the resultant barotrauma associated with this. This can be prevented with meticulous care of the ventilator by experienced respiratory therapists and their hourly ventilator examinations.

Treatment is carried out for 12 to 18 hours per day for at least three days and no more than seven. The reservoir of the aerosol machine contains 20 mg/cc of Ribavirin and the child's breathing rate controls the dose delivered. The daily dose of Ribavirin therapy costs more than \$200. Upon purchasing the drug, the company supplies the aerosol generators without charge.

Who should be treated with Ribavirin? The company that produces Ribavirin has listed in its indications a general recommendation for use in patients with severe lower respiratory disease. We have identified a group of clinical criteria that we use to identify appropriate candidates for Ribavirin therapy. Those criteria include patients with a respiratory rate greater than 50, those with severe apnea, those with carbon dioxide retention, those with severe hypoxemia, those with severe disease requiring admission to the Pediatric ICU, and those patients with impaired cardiac, pulmonary or immune systems.

Clinical studies with aerosolized Ribavirin have failed to demonstrate any evidence of clinical intolerance, significant side effects, or adverse reactions attributable to the drug.

Summary

Bronchiolitis is a disease responsible for significant morbidity in infants not only in the United States but worldwide. Recent developments now allow us to make the diagnosis earlier and for the first time to use specific antiviral therapy with Ribavirin. For infants with respiratory failure, severe apnea, or who are at high risk with impaired cardiac, pulmonary or immune systems, Ribavirin provides potentially lifesaving therapy.

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Evaluation and Treatment of Hepatic Metastasis from Colorectal Cancer

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COLON CANCER is encountered by all physicians. Approximately 125,000 new cases occur each year in the U.S., and about 58,000 die of colorectal cancers in a given year. Of patients operated on for colorectal carcinoma, 20% will have hepatic metastases at the time of surgery.¹ And, half to two-thirds of all patients with colorectal cancer will develop hepatic metastases some time during the course of their disease.²

Obviously, the detection and treatment of hepatic metastases must be a primary concern of the physician caring for a patient with colorectal cancer. Unfortunately, there are no early warning symptoms of liver metastasis; the symptomatic patient is a patient with relatively advanced disease. Ascites and jaundice are particularly ominous findings indicating terminal disease.² Therefore, the physician must look for liver metastases before they become symptomatic if useful palliation is to be provided. Prospective studies from the National Cancer Institute have tested the value of laboratory tests in detecting hepatic involvement. Alkaline phosphatase, GGTP, SGTP, LDH, SGOT, LAP, and 5'nucleotidase were found to be 53% to 65% accurate (with no significant differences between the tests). The CEA was

slightly better, with a 79% accuracy rate. The authors concluded that laboratory tests are not accurate enough as screening tests for liver metastases, and suggested that an imaging study be included in the evaluation for liver metastases.³

There are a number of hepatic imaging tests that one may choose from. In the past, the radionuclide scintiscan has been the most frequently used test. The technitium 99m sulphur colloid is picked up by the normal reticulo-endothelial system, leaving metastases as "cold" lesions. But, this test is limited by its inability to detect lesions < 2 cm in diameter. Computed tomography can resolve lesions 1-1.5 cm in diameter but is more expensive. Angiography is the most predictive diagnostic test to assess the presence, number, and distribution of hepatic metastases. But, angiography is also the most invasive and costly of the imaging tests and is therefore reserved for the patient who is being considered for a major resection. As an initial test, ultrasound has much in its favor, from a diagnostic and economic standpoint. Most liver metastases are hyperechoic and easily visualized; if the ultrasound is questionable, a CT scan may be done.

With the variety of tests available, it becomes difficult to determine how one should follow his patients. Although debatable, the recommendations of Cooperman for semi-annual liver function tests (including a CEA) and ultrasound seem reasonable.²

Before discussing the treatment of hepatic metastases from colorectal carcinoma, we should review the natural history of this disease. Median survival from the time of diagnosis of metastatic disease has traditionally been con-

sidered to be in the range of 5 to 12 months, with no 5-year survivors.^{4,5} But Wagner from Mayo reported a 73% one-year survival, a 42% two-year survival, and a 12% three-year survival in patients with hepatic metastases who had no treatment.⁶ Therefore, we must be aware that knowledge of the natural history of hepatic metastases is incomplete. Caution must be used in interpreting studies that compare therapy to historic controls because of the variability in survival that has been reported.

A number of treatment options are available for the patient with hepatic metastases from colorectal cancer. These include: radiation, systemic chemotherapy, hepatic arterial therapy, and surgical resection. Normal liver tissue will tolerate 3000-3500 rads before radiation hepatitis develops.⁷ However, this is below the dose required to obtain control of solid, macroscopic tumors. Thus, radiation cannot be considered curative, and survival is not improved with external beam radiotherapy. But, significant palliation may be achieved in symptomatic patients. Over 75% will experience relief of abdominal pain, and smaller percentages will have improvement in liver functions or hepatomegaly.⁸

Since its introduction in the 1950s, 5-fluorouracil has been the standard chemotherapeutic agent for advanced colorectal cancer. When given systemically the reported response rates have been variable, ranging from 15 to 63%, depending on the patient population and the criteria used to define a positive response. A compilation of nine reported series reveals a

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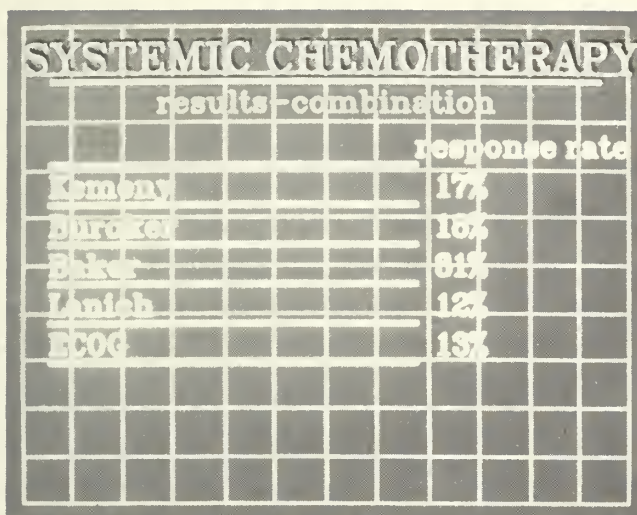


FIGURE 1

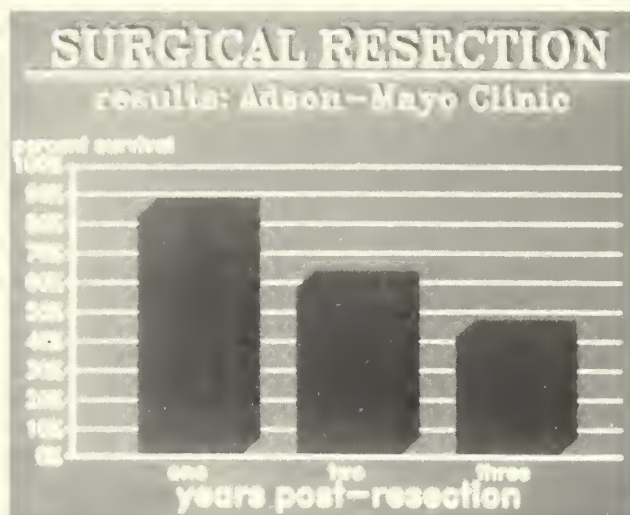


FIGURE 2

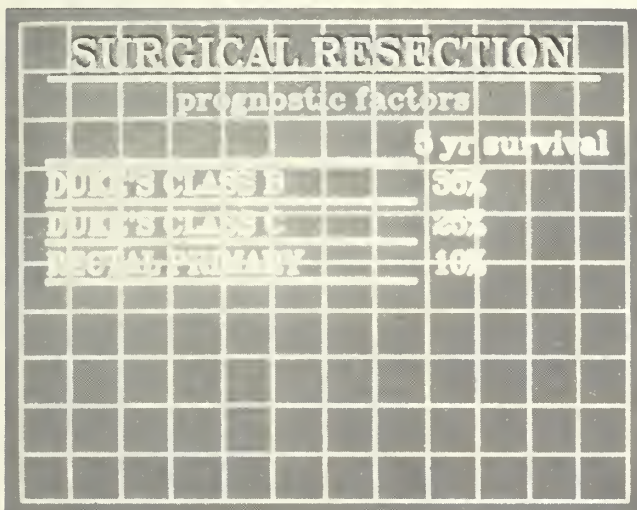


FIGURE 3

mean response rate of 23%.⁹ The mediocre results with these single drug regimens led investigators to evaluate combination chemotherapy. Moertel employed a combination of methyl-CCNU, 5-fluorouracil, and vincristine. A 43% response was reported,¹⁰ but later investigators failed to confirm the finding of better results with multiple drug regimens (Fig. 1).

The Eastern Cooperative Oncology Group compared 5-fluorouracil alone to 10 different combination regimens in 848 patients. An overall response of 13% was obtained, and no combination was felt to be better than 5-FU alone.

It is noteworthy that although the response rate was low, if a response was obtained the median survival was improved.¹¹

Thus, systemic chemotherapy for hepatic metastases has been limited by the modest response rates traditionally obtained, and the finite duration of the response. In addition, one must consider the "costs" of systemic administration in terms of the gastrointestinal and hematologic side effects. Some series report that up to 6% of patients die of drug-related causes.¹²

The infusion of chemotherapeutic agents directly into the hepatic artery

has three theoretic benefits: 1) a high concentration of the drug is delivered directly to the tumor, 2) local infusion should reduce systemic toxicity, and 3) continuous infusion allows prolonged exposure of the tumor cells to the drugs.¹³ Hepatic arterial chemotherapy may be delivered in one of two ways: via a percutaneous catheter or through a surgically implanted pump.

The percutaneous catheter is threaded into the brachial artery and then guided to the hepatic artery under fluoroscopic control, where it remains for 5-7 days. Response rates from 50% to 83% have been reported, with me-

FIGURE 1: Response rates of five series using multiple drug chemotherapy regimens for liver metastases from colorectal primaries.

FIGURE 2: Survival rate after hepatic resection of metastases (modified from Adson: *Ann Surg*, 191:576, 1980).

FIGURE 3: Survival rate after resection of liver metastases based on the stage of the primary lesion.

dian survival ranging from 8 to 16 months. Although mortality is low (< 1%), up to 30% experience some catheter-related complication.¹⁴

The surgically implanted Infusaid pump has a 50 ml drug chamber, which delivers a flow of 3 ml/day. The unit is powered by a Freon charge and is refilled percutaneously every two weeks. Preoperatively, an angiogram is obtained to define the hepatic arterial anatomy. This is necessary because of the frequent anomalies encountered in the vascular anatomy of this region. If the anatomy is normal, the catheter is inserted into the gastroduodenal artery. The right gastric artery is ligated to prevent infusion of the drugs into the stomach or duodenum. And, a radionuclide flow study or a fluoroscein injection is used to confirm that the entire liver is being perfused by the catheter.¹⁵

The response rates to hepatic artery infusion of chemotherapy appear superior to those obtained with systemic administration. The reported response rates range from 55% to 75%.¹⁶ Ensminger has reported some of the most promising results with hepatic artery infusion. The Infusaid pump was implanted in 106 patients. Floxuridine (FUDR) was given in 14-day cycles. If the patient failed FUDR, mitomycin was then given. Ninety-three patients completed two or more courses of chemotherapy and were evaluated. The patients were divided into two groups. Fifty had no known extrahepatic metastases at the time the pump was implanted. Eighty-three percent of this group responded, and the median survival was 18 months. Importantly, 39 of the 50, or 78%, eventually recurred at extrahepatic sites. This points out an obvious limitation of hepatic infusion, in that disease outside the liver is not adequately treated. The second group of 43 patients had evidence of extrahepatic spread at the time the pump was implanted. Not surprisingly, the response rates and survival were less in this group.¹⁷

What about using hepatic infusion in patients who have already failed systemic therapy? Patt reported 22 patients who had failed 5-FU and were then given FUDR and mitomycin by hepatic arterial infusion. A 45% response rate was seen.¹⁸ So, hepatic arterial therapy may have some benefit for those patients who have failed standard systemic regimens. However, Buroker's study had somewhat different implications. He found that if patients had been given 5-FU in the standard bolus fashion, subsequent hepatic infusion could produce a 50% response rate. But, if the 5-FU had been administered as a continuous infusion, none responded to later hepatic arterial regimens. This implies that what is important is the duration of the infusion rather than the route.¹⁹

Fortner treated 117 patients with surgically implanted infusion catheters. He found that the response rate was the same whether the catheter was implanted in the hepatic artery, the portal vein, or both.²⁰ This also implies that it is not the route, but the continuous infusion that is important for the response to direct hepatic administration.

Although other therapies may improve the median duration of survival, the only "curative" treatment is surgical resection. Unfortunately, only about 20% of patients with liver metastases are candidates for tumor excision.¹ In evaluating a patient for a possible hepatic resection, a number of factors must be considered. The primary tumor must be controlled, there must be no evidence of extrahepatic disease, and the patient must be an acceptable operative risk. Therefore, the preoperative evaluation should include a barium enema or colonoscopy to detect anastomotic recurrence or a second primary lesion. Abdominal CT scan should be done to rule out extensive intrabdominal disease (either diffuse liver involvement or disease outside the liver). And, a chest CT scan is done to detect pulmonary metastases.

Hepatic resections may be considered as minor (wedge resections or segmentectomies) or major (lobectomies or trisegmentectomies). Reported mortality rates range from 0% to 20%.^{21,22} Causes of death include: hemorrhage, liver failure, sepsis, myocardial infarction, and pulmonary embolus. Complications occur in 20% to 40%,²²⁻²⁴ and include subphrenic abscess, pleural effusion, wound infection, prolonged biliary drainage, and bleeding. Despite the high mortality and morbidity incurred, hepatic resection remains an important form of therapy as it is the only modality yielding a significant percentage of five-year survivors. Reported survival rates range from 23% to 29%.

Coppa of New York University reported on 25 patients who had resection of hepatic metastases from colorectal cancers.¹ Twenty had single lesions and three had multiple but unilobar lesions. Only one operative death was encountered. The median survival was 29 months and the five-year survival rate was 25%.¹ Adson of the Mayo Clinic resected 34 patients with only two deaths. The survival (*Fig. 2*) was 82% at one year, 58% at two years, and 41% at three years.²³

Foster has defined the prognostic factors associated with liver resection.²⁴ He concluded that the timing of the surgical resection made no difference, i.e., whether lesions were synchronous or metachronous made no difference in survival. The extent of resection made no difference. As long as a margin can be obtained, wedge resection was as effective as formal lobectomy. The size of the metastatic lesion was important, with lesions greater than 6 cm having only an 8% survival rate. And, the Duke's classification of the primary lesion was significant (*Fig. 3*).

Unfortunately, only about 20% of patients with hepatic metastases from colorectal cancer will be resectable for "cure." Again, for the patient to be a surgical candidate he must be a reasonable operative risk (without prohibitive

cardiac or pulmonary disease), have no extrahepatic metastases, and only localized liver involvement. For the patient who is free of extrahepatic disease but has diffuse hepatic replacement, hepatic arterial infusion therapy may be appropriate. And, for the patient with both hepatic and extrahepatic metastases, systemic chemotherapy is considered. Radiation therapy is reserved for symptomatic relief of pain.

In conclusion, hepatic metastases from colorectal cancer still have an ominous prognosis for most patients, despite the currently available treatment modalities. Hopefully, developments in chemotherapy and immunotherapy will lead to better results in the future. But the best results will be obtained if early detection of colon cancers or premalignant lesions can be reliably achieved, thus preventing the occurrence of metastases.

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Birth Defects Registries: A Survey of State Programs

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DURING THE 1980s the public has shown increasing concern about the effects of the environment on adverse reproductive outcome. Many states, recently including Indiana,¹ have responded by legislating and implementing monitoring programs for the detection and reporting of birth defects and other adverse reproductive outcomes.

Over the past several years, we collected information on registries for birth defects and other adverse reproductive outcomes in all of the individual states and the District of Columbia. This report summarizes the results of these surveys prior to the passage of the legislation authorizing the creation of the Indiana Birth Problems Registry. A future paper will document details of the implementation of the Indiana registry.

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Acknowledgments: The authors wish to acknowledge the work on the U.S. map prepared by the staff of the Dept. of Medical Illustrations at the Indiana University School of Medicine. In addition, the authors thank Brenda Wilkinson for her expert preparation of the final draft.

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Abstract

A survey was conducted in 1984 to obtain data on existing state surveillance programs for birth defects. Programs have been contacted since 1984 to update information. Of the 50 states and District of Columbia, 21 (41%) have some form of monitoring system. Some states have two different active programs, resulting in a total of 32 programs reviewed. Over two-thirds of these programs have begun since 1980, some as a direct

result of public concern about the relationship between birth defects and the environment. Half of the programs were created as a result of state legislation. The majority are statewide in coverage. Many recent programs ascertain cases beyond the first year of life and use hospital-based or multiple sources of case ascertainment. The survey demonstrates wide variability among programs in the breadth and detail of data collected in birth defects registries.

Materials and Methods

In July 1984, a questionnaire was mailed to all state health commissioners asking whether or not there was a birth defects registry in their state, including the District of Columbia. If the answer was "yes," the following characteristics were requested:

1. The year of initiation of the registry.
2. Whether or not the registry was mandated by law.
3. Whether the program was statewide or only covered a portion of the area.
4. The age of ascertainment of individuals into the registry.
5. Which sources of information such as vital records, hospital records, special forms, etc. were used to ascertain the cases.

6. The scope of the registry, i.e., whether or not the International Classification of Diseases codes 740-759.9 for congenital malformations² was used or other combinations of ICD codes, and whether chromosomal abnormalities and biochemical defects were also enumerated in the registry.

Copies of the forms used and copies

of the legislation authorizing the registries, where applicable, were also requested.

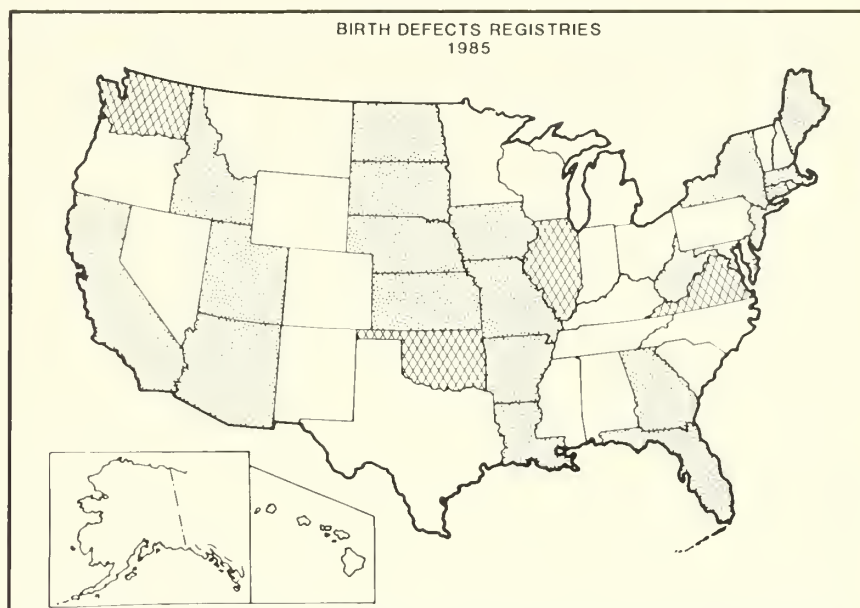
One year later we re-surveyed the states by sending a second questionnaire to either the individual who responded to the initial survey or to the genetic services coordinator for that state. On the second questionnaire we listed the information that was received the previous year and asked the respondent to indicate whether or not the information was correct. If there were any changes needed in the information, the respondent was asked to make the necessary corrections.

Results

In the initial survey of 1984, responses were received from 44 (88%) of the states, while 42 (84%) of the states returned the second questionnaire in 1985. In both surveys, telephone follow-up or personal contact resulted in direct collection of information or later return of the questionnaire from all states. The accompanying U.S. map indicates the status of each of the states as of the end of 1985. Of the 50 states and the District of Columbia, 21

(41%) were judged to have some form of monitoring system. Several states, such as Hawaii and Michigan, simply monitor temporal trends in the number of birth defects. These were not considered registries for our purposes and some of the other states that responded "no" probably perform similar analyses. States such as Delaware, the District of Columbia, Montana and Wisconsin indicated that they were planning to have surveillance systems in the near future. Four states (Illinois, Oklahoma, Washington and Virginia) are hatched in the map because legislation was passed mandating a birth defects surveillance system which began in 1986. Arizona was completing a pilot project, summarized in this manuscript, and this program also was expanded statewide in 1986 as a result of legislation. The Illinois and Washington programs began Jan. 1, 1986 and Oklahoma and Virginia later in the year. These four programs are included in our summary tables. In addition to Illinois with two programs, six other states (Arkansas, Connecticut, Florida, Kansas, Massachusetts and West Virginia) either have or recently have had two different active programs which are also summarized, resulting in a total of 32 programs included in our review. Registries maintained by individual investigators for single or specific groups of defects are not included.

Table 1 breaks down the programs by the year of initiation of the project, whether or not the projects were man-



Status of state birth defects registries as of the end of 1985. States with dots had registries; states with cross hatching had programs beginning in 1986.

dated by legislation and whether the geographic area included the entire state or a specified area within the state. Both New Jersey (1928) and Massachusetts (1939) have had long-standing programs, although these have undergone modification over the years. For example, in 1983 the New Jersey law was amended to include spontaneous abortion. Both of these systems are somewhat unique in that they are closely allied with the delivery of services and this has been more of a focus than birth defects monitoring. The only ongoing program created between the Second World War and the

1970s is the Metropolitan Atlanta Congenital Defects Program (MACDP) in Georgia conducted by the Centers for Disease Control.³ Connecticut's programs began in the early 1960s but were discontinued in the next decade, and have only recently been reconstituted. A number of the programs that began in the decade of the 1970s either use or slightly modify the form employed by the MACDP. Over two-thirds of the state programs have only begun since 1980. Some of these were directly due to public concern over a specific environmental problem such as Malathion spraying for the Mediterranean fruit fly in California, Love Canal in New York, and EDB levels in drinking water in Florida.

Only half of the programs were created as the result of state legislation. Some of the recent programs not legislated were initiated as a result of specific research projects, and their long-term continuation may be tenuous. The majority of programs are statewide; those with a narrower geographic area are either pilot programs in anticipation of future expansion or have special epidemiologic focus. A sec-

TABLE 1
Summary of Registry Characteristics—Legislation and Study Population

Period	No.	LEGISLATED		STUDY POPULATION	
		Yes	No	Statewide	Other
1928-1939	2	2	0	2	0
1940-1969	1	0	1	0	1
1970-1979	6	2	4	4	2
1980-1983	10	5	5	8	2
1984-	13	8	5	11	2
Total	32	17	15	25	7

ond program in Massachusetts, based at Massachusetts General Hospital and Brigham and Women's Hospital under the direction of Dr. Lewis Holmes, is principally concerned with establishing the correct diagnosis for epidemiologic studies in newborns or neonates with congenital malformations.

Table 2 displays the ascertainment age of cases in the various registries. Many of the programs in the 1980s have expanded surveillance to ages beyond the first year of life. Washington registers up to the age of 13; recent legislation in West Virginia allows collection up to the age of 18. Most of the programs that collect cases over the age of one limit the age range to two or three years.

Table 3 shows the ascertainment source. The trend is toward using hospital-based or multiple sources of case ascertainment rather than vital records alone. This is particularly true in those projects with a special focus or surveying a limited geographic area. Prior to 1980 only the Atlanta program, Nebraska and Florida had established ongoing programs using other than vital records for case ascertainment.

Most states use the codes from the International Classification of Diseases,² particularly codes 740-759.9 in combination with other codes for structural, biochemical, or chromosomal defects. A few programs include low birth weight and other risk factors, whether or not there are any congenital malformations present. Several states (Arkansas, California, both projects in Florida, Iowa, West Virginia and Nebraska) follow the coding used by the MACDP, with Nebraska sending its forms to the CDC for review prior to final entry in the data base.

There is tremendous variability in the various surveillance programs ranging from, for example, Connecticut where the registry is little more than lists of names and geographic locations of cases with various malformations, to the MACDP which interviews mothers of malformed infants. Nineteen of the

TABLE 2
Summary of Registry Characteristics—Ascertainment Age

Period	Newborn	Neonate	<1 year	Other
1928-1959	1	0	1	0
1960-1979	3	0	4	0
1980-1983	4	1	3	2
1983-1986	3	0	3	7

TABLE 3
Summary of Registry Characteristics—Ascertainment Source

Period	Vital Records	Special Form Only	Hospital Based + Vital Records	Multiple Sources
1928-1959	1	1	0	0
1960-1979	2	0	2	3
1980-1983	3	2	3	1
1984-	1	0	6	6

programs returned forms with the questionnaires and approximately half of them collect data beyond simple demographics. California's focus is on occupation with payment of one dollar per infant record to insure that parental occupation(s) are coded on the birth certificate. California also has developed a time-space cluster investigation component to the project which conducts investigations on a statewide level. Maryland collects detailed information on obstetrical and pregnancy history, occupation, alcohol and tobacco usage, and is part of the state's toxic substances registry. The legislation includes the restriction that unless the mother consents, no name or address is attached to the information that is collected. The newest program in Arkansas also emphasizes occupational and environmental exposures. The project is based in the University of Arkansas Medical Center and is co-ordinated with other environmental data in the state so that agricultural (i.e., pesticide) exposure, chemical spills, air and water quality can be examined in relation to congenital malformations. The MACDP has been described elsewhere in detail.³ The use of interviews to collect occupational and exposure data, in addition

to the forms detailing pregnancy history, has permitted accumulation of a register of cases with different malformations to be available for use in epidemiologic investigations.

The table in the *appendix* presents information about various aspects of the individual programs of the states that were summarized above.

Discussion

It is clear that there is a wide variety of approaches used in the different states that have some type of birth defect registry. This in part reflects differences in the way in which the registries were created and the primary goals for establishing the registry. The purposes for doing surveillance of birth defects may be broadly grouped into three categories: epidemiologic, preventive/planning, and social/educational.

Obviously, the opportunity to carry out epidemiologic studies is a major impetus for surveillance systems. Birth defect registries provide information on the incidence of birth defects and other outcomes to allow establishment of baseline rates. Over time, these data allow the investigators to characterize secular, demographic and geographical trends. Many state programs were

APPENDIX
Characteristics of Individual Programs*

State	Year Began	Legislated	Population	Ascertainment Age	Source	Comments
Arizona	1983	N	R	up to 1	H	pilot project, 1986 legislation pending
Arkansas	1984	Y	R	up to 3	H	university based, coordinated with state environmental data
	1981	N	S	newborn	V	focus on young unmarried mothers; still active?
California	1983	Y	R	up to 2 (some 6)	M	record linkage for multiple ascertainment, focus on occupational exposures, state- wide cluster investigation protocol
Connecticut	1963-77, 1983	N	S	up to 1	V	death records
	1964-71, 1983	N	S	newborn	V	
Florida	1971	N	R	up to 1	M	voluntary participation, use modified CDC forms
Georgia	1984	N	S	up to 1	H	use modified CDC form
(MACDP)	1968	N	R	up to 1	M	interview mothers of defective children since 1970, Atlanta metropolitan area, administered by CDC, epidemiologic registry of cases
Idaho	1984	N	S	newborn	M	
Illinois	1986	Y	S	up to 1	H,V	administered by hazardous substances registry
	1986	Y	S	neonatal	H,V	adverse reproductive outcome program
Iowa	1984	Y	R	up to 1	H	expanding pilot program, Univer- sity based
Kansas	1981	Y	S	up to 1	H,V	
	1985	N	S	up to 6	M	grant from MCH program to track high risk infants
Louisiana	1982	Y	S	newborn	F	voluntary participation, 10 diagnostic groups
Maine	1984	N	S	newborn	V	grant from NIOSH, occupation and other epidemiologic items on vital records

(Continued on next page)

created with such a focus in order to detect increases in prevalence of specific types of malformations and to try to find the causes and eliminate them.⁴ Surveillance personnel are also involved in studies of birth defect clusters. Linkage of data from registries to those data available on the environment affords opportunities to detect associations of environmental agents with birth defects and to test teratogenicity hypotheses.

It is apparent that environmental agents causing dramatic increases in specific types of adverse reproductive outcomes are the exception rather than the rule, and that no new teratogenic

agent has been directly identified as a result of even the best surveillance systems created in the wake of the thalidomide episode in the early 1960s. The main problems in being able to detect more subtle teratogenic effects are the under-ascertainment of cases, particularly in vital records-based programs,^{5,6} the numbers of cases surveyed per year,⁶ and the lack of quality control in diagnosis of identified cases.⁶ States that have active rather than passive surveillance systems by opening hospital records and using multiple sources of ascertainment have the best opportunity for conducting meaningful epidemiologic studies. We

are likely to see more programs patterned after the MACDP, and recent state programs in California, Arkansas, Iowa, Arizona and Washington, if etiologic studies are the major aims. Other approaches taken by some states may be even less likely to provide fruitful data for epidemiologic purposes, such as the use of a restrictive list of broad "sentinel" defects as in Louisiana and Maryland. A further restriction in Maryland allows mothers to refuse to have identifying information associated with the records, and voluntary programs such as in Louisiana and one of the Florida surveillance registries are not recommended elements to have in

APPENDIX
Characteristics of Individual Programs*

State	Year Began	Legislated	Population	Ascertainment Age	Source	Comments
Maryland	1983	Y	S	newborn	F,V	focus on occupation and environmental exposures, sentinel group of defects, parent can disallow name and address to attach to record
Massachusetts	1939	Y	S	newborn	F,V	focus on linkage to services of high risk infants, program modified in 1963 and 1984
	1979	N	R	newborn	H	focus on correct diagnosis, Dr. L. Holmes in 2 Boston hospitals
Missouri	1979	N	S	up to 1	M	hospital based with record linkage to other sources
Nebraska	1973	Y	S	up to 1	H,V	use modified CDC form, CDC reviews coding, entire state part of BDMP
New Jersey	1928	Y	S	up to 1	F	modified in 1983 to include spontaneous abortions, part of the service-delivery program in the state
New York	1982	Y	S	up to 2	H	concurrent chromosome registry since 1969
North Dakota	1980	N	S	neonatal	V	linked with crippled children's program
Oklahoma	1986	Y	S	?	?	
South Dakota	1977	Y	S	newborn	V	
Utah	1985	N	S	any age	M	
Virginia	1986	Y	S	up to 2	H,V	hospital discharge summaries principal source
Washington	1986	Y	S	up to 13	F,V	sentinel group of defects, but codes others as well
West Virginia	1985	Y	S	up to 2	M	use modified CDC forms, bill lists the 12 sentinel defects and any other as requested, allows ascertainment to age 18
	1970	N	S	newborn	V	may no longer be active?

***Appendix Key**

Y = yes

N = no

S = statewide

R = region within the state

V = vital records

H = hospital based

F = special form

M = multiple sources

registries designed for etiologic ends.

A major goal of some programs is to utilize these data to identify the numbers and locations of infants with conditions that cause developmental disabilities, thus offering an opportunity to plan services. Likewise, examination of utilization patterns for regional genetic services centers in relation to the localized incidence of birth defects and genetic diseases can provide an im-

portant tool for the planning and coordination of statewide genetic evaluation and counseling services.⁷

Finally, the social and educational components of birth defect registries should not be overlooked. A major goal of some programs has been to improve the flow of information to the parents of affected newborns by informing them of available resources and locations of care facilities. Some have even

set up hotline phone numbers for information.

Craft⁸ has highlighted the shift to more service-oriented goals of birth defects registries. State programs, such as those long-standing in New Jersey and Massachusetts with a focus on delivery of services, will also become more prevalent in the future. Many programs currently established with minimal changes could effective-

ly fulfill such service goals. One positive offshoot of a focus on goals of community and professional education would be better ascertainment of cases for case control and cluster investigations.

As pointed out by Kallen, *et al.*,⁵ there is a trade-off between the number of cases ascertained and the quality of diagnoses. As the size of the population surveyed increases, the problems of ascertainment and diagnostic quality are magnified and the rare but potentially important malformation may go unnoticed. It may be that more restricted geographic programs with a focus on diagnostic quality, such as that underway in Boston by Dr. Holmes, will in the long run be more productive for epidemiologic investigations, while service-related goals of health planning, advocacy and

education necessitate the collection of very large numbers of cases with less initial vigorous diagnostic precision.

Given the financial and personnel constraints, it is very difficult to fulfill goals for both etiologic studies, which often provide the impetus for creating legislation authorizing birth defect registries, and the equally important service-oriented goals of a registry. Careful consideration of these issues is currently underway in this state and will be critical in the development of the Indiana Birth Problems Registry.

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without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of triamterene and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Angiotensin-converting enzyme (ACE) inhibitors can elevate serum potassium; use with caution with 'Dyazide'. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine.

Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The

following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function. Thiazides may add to or potentiate the action of other antihypertensive drugs. Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

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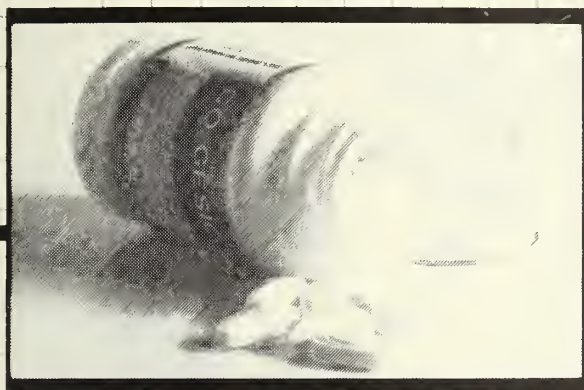
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Electrophysiologic Directed Endocardial Resection and Cryoablation in the Treatment of Ventricular Tachyarrhythmias

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VENTRICULAR TACHYARRHYTHMIAS are common in patients with ischemic heart disease. Over 350,000 sudden cardiac deaths occur each year, the majority attributed to ventricular tachycardia and fibrillation in patients with coronary artery disease.^{1,2,3} Early survival has improved in part due to improved resuscitation of pre-hospital cardiac arrest victims and advances in pharmacologic therapy. However, arrhythmias frequently recur despite aggressive long-term medical therapy.

Ventricular tachycardia may often be associated with a left ventricular aneurysm. Standard aneurysmectomy with and without myocardial revascularization prevents life-threatening ventricular arrhythmias in only 20-30% of patients^{4,5} while electrophysiologic map-guided therapy yields an arrhythmia cure in 60-85%.⁶

The purpose of this paper is to report our initial experience with electrophysiologically directed endocardial resection and/or cryoablation as an adjunct to aneurysmectomy and myocardial revascularization in patients with recurrent ventricular tachyarrhythmias.

Methods

Patient Population

Thirty-three patients underwent surgery at the Indiana University Medical Center between March 1979 and September 1986 for symptomatic ventricular arrhythmias (*Table 1*). Recurrent ventricular fibrillation or recurrent sustained ventricular tachycardia was the primary indication for surgery in 28 patients. In the re-

maining five patients, surgical arrhythmia therapy was an adjunct to already proposed cardiac surgery directed to treat coronary artery disease (four patients) or congenital heart disease (one patient).

Significant coronary artery stenosis was documented at the time of cardiac catheterization in 31 patients, two of whom had coexistent valvular heart disease (mitral stenosis, aortic insufficiency). Ventricular aneurysms were documented in 31 patients, of whom 30 had coronary artery disease. The remaining patient had developed a left ventricular aneurysm at the site of an epicardial pacemaker implantation for congenital complete heart block. The suture securing the pacemaker wire had apparently occluded a coronary artery. One patient had a ventricular septal defect due to myocardial infarction, and one patient had a congenital secundum atrial septal defect.

Ventricular tachycardia and ventricular fibrillation had recurred pre-operatively despite antiarrhythmic drug therapy with both conventional and experimental agents in the 28 patients who underwent surgery primarily for arrhythmia control (*Table 1*). Drug trials had failed to prevent spontaneous recurrence of sustained ventricular tachycardia or ventricular fibrillation, or had failed to prevent induction of these arrhythmias during electrophysiologic testing. One or more electrical cardioversions or defibrillations were required in all 28 patients. Five patients required pre-operative placement of temporary transvenous electrodes for overdrive suppression of ventricular tachycardia or transvenous electrical cardioversion.⁷

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This study supported in part by the Herman C. Krannert Fund; by Grants HL-06308 and HL-07182 from the National Heart, Lung and Blood Institute of the National Institutes of Health, Bethesda, Md.; the Attorney General of Indiana Public Health Trust; the Roudebush Veterans Administration Medical Center; and by a Grant-in-Aid from the American Heart Association, Indiana Affiliate, Inc., Indianapolis.

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Pre-operative Electrophysiologic Testing

Pre-operative programmed electrical stimulation of the atrium and ventricles and, if possible, left ventricular endocardial mapping was performed using a previously described pacing protocol,^{8,9} briefly summarized as follows.

Two to four multipolar electrode catheters were introduced percutaneously under fluoroscopic guidance into the high right atrium, across the tricuspid valve in the region of the His bundle and into the right ventricle. An electrode catheter was inserted into the femoral or brachial artery and advanced retrogradely into the left ventricle. Intracardiac electrograms and standard electrocardiographic leads I, II, III and V₁ were displayed simultaneously on a multichannel oscilloscope and recorded at paper speeds of 50 to 150 mm/sec. Pacing was performed with a programmable stimulator using 2.0 msec rectangular pulses at twice late diastolic threshold. Premature ventricular stimulation was performed with one to three extra stimuli introduced during sinus rhythm and during ventricular pacing at three cycle lengths, usually 600, 500 and 400 msec. If ventricular tachycardia was not induced at the first right ventricular endocardial site (usually the apex), the catheter was moved to a second site (usually the right ventricular outflow tract) and stimulation was repeated. Left ventricular stimulation was also used if the above pacing protocol failed to initiate the tachycardia.

Sustained ventricular tachycardia was defined as tachycardia lasting 30 seconds or longer or requiring termination before that time because of hemodynamic compromise. Nonsustained ventricular tachycardia was defined as tachycardia of three or more consecutive premature ventricular complexes spontaneously terminating in 30 seconds or less.

Once hemodynamically stable ventricular tachycardia was induced, endocardial mapping was performed.

TABLE 1
Clinical Characteristics of 33 Patients Who Underwent Surgical Treatment for Ventricular Tachyarrhythmias

Age: 58 yrs. (mean), 27-76 yrs (range)	
Sex: 28 males, 5 females	
Underlying Heart Disease: CAD	31
ASD	1
LV aneurysm due to pacemaker	1
Associated Cardiac Lesions: LV aneurysm	31
Anterior/apical	25
Inferior/posterior	6
VSD	1
Valvular	
AI	1
MS	1
Clinical Arrhythmias: VF	5
VT-S	26
VT-NS (symptomatic)	2
Drug Trials: Quinidine	21
Procainamide	25
Disopyramide	8
Phenytoin	6
Tocainide	5
Lorcainide	1
Encainide	1
Flecainide	4
Mexiletine	3
Aprindine	3
Propafenone	2
Amiodarone	10

Abbreviations: CAD = coronary artery disease; ASD = atrial septal defect; LV = left ventricular; VSD = ventricular septal defect; AI = aortic insufficiency; MS = mitral stenosis; VF = ventricular fibrillation; VT-S = sustained ventricular tachycardia; VT-NS = non-sustained ventricular tachycardia.

Utilizing the right ventricular catheter as a fixed reference electrode, the distal electrodes of the left ventricular catheter were positioned under fluoroscopic guidance to map 8 to 16 left ventricular endocardial sites. Local ventricular activation times were measured at each site with reference to the QRS onset in the surface electrocardiogram leads. The site of tachycardia origin was identified by finding the endocardial location with the earliest electrical activity, usually preceding the QRS onset by 0 to 70 msec. Activation times were plotted on a schematic representation of the left ventricle to depict tachycardia origin and serve as a guide for surgical therapy (Figure 1).

Operative Procedure and Electrophysiologic Mapping

At the time of surgery, the chest was opened through a median sternotomy, and epicardial electrodes were sewn on the right atrium and right and left ventricles. Following cannulation the patient was placed on normothermic cardiopulmonary bypass and the aneurysm or epicardial scar was identified and the left ventricle was entered. Using a pacing protocol similar to that described above, programmed ventricular stimulation through the right or left ventricular epicardial lead was performed to initiate sustained ventricular tachycardia.

During sustained ventricular

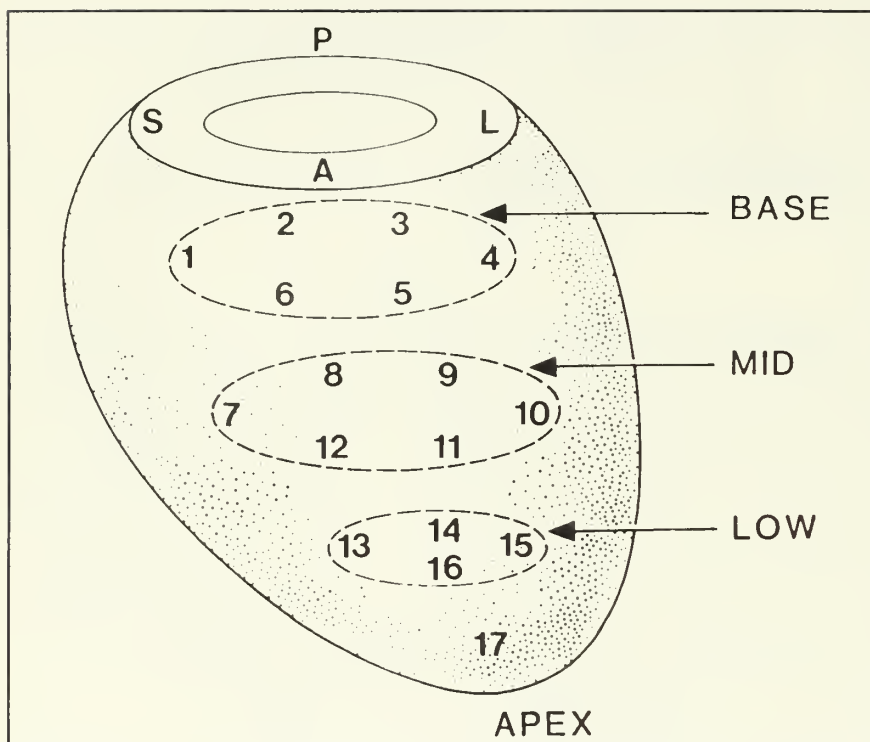


FIGURE 1: Schematic representation of the left ventricle used to plot ventricular activation times to identify ventricular tachycardia origin. The numbers represent specific endocardial sites. S, septal; A, anterior; P, posterior; L, lateral.

tachycardia, a hand-held electrode was moved systematically from point to point in a circumferential manner in 1 centimeter circles from the aneurysm border (Figure 2). The site of earliest ventricular activation during ventricular tachycardia was identified from these bipolar recordings. The aneurysm was resected along with the endocardial surface in those areas with earliest activation not included in the aneurysm resection. In our more recent experience, areas not easily accessible to excision, e.g., inter-ventricular septum or base of the papillary muscles, were frozen using a cryoprobe cooled to -60°C for two minutes. Initiation of ventricular tachycardia was again attempted with further mapping and resection performed if ventricular tachycardia was still inducible.

If ventricular tachycardia could not be induced and/or mapped, visible

areas of endocardial scar were then resected with additional guidance using the pre-operative map, if available. The heart was then cooled to 26°C and ventricular asystole was induced with cold blood potassium cardioplegia. Aneurysm repair, aortocoronary bypass, valve replacement/repair or atrial/ventricular septal defect closure was then carried out. After warming, the heart was defibrillated if necessary and the patient weaned from cardiopulmonary bypass. Temporary epicardial pacing wires placed on the right atrium, right ventricle and left ventricle were brought out externally through a skin incision in the chest.

Post-operative Evaluation

Post-operatively, continuous electrocardiographic monitoring was maintained. Using the temporary epicardial pacing wires inserted at surgery, programmed ventricular stimulation was

repeated five to 10 days after the surgical procedure. These wires were then removed with gentle traction without complication.

Results

Surgical Results

A total of 33 patients underwent surgical therapy for recurrent ventricular tachyarrhythmias with the procedure(s) performed summarized in Table 2. Aneurysmectomy and endocardial resection was performed in 31 of 33 patients while one patient with prior infarction had an area of visible scar without aneurysm formation and underwent revascularization with endocardial resection. Concomitant aorto-coronary bypass grafting was performed in 26 of the 33 patients. One patient

TABLE 2
Operative Procedures Performed
N = 33

	No. Patients
CABG + AN + EN RES + CRYO	7
CABG + AN + EN RES (MVR-1)	18
AN + EN RES (AVR-1) (MV COMM-1)	5
AN + EN RES + CRYO + VSD Repair	1
CRYO + ASD Repair	1
CABG + EN RES	1

Abbreviations: CABG = coronary artery bypass grafting; AN = aneurysmectomy; EN RES = endocardial resection; CRYO = cryoablation; ASD = atrial septal defect; VSD = ventricular septal defect; MVR = mitral valve replacement; AVR = aortic valve replacement; MV COMM = mitral valve commissurotomy.

with an atrial septal defect and recurrent ventricular tachycardia localized by epicardial mapping to the right ventricular outflow tract had epicardial cryoablation in an attempt to eliminate the arrhythmia and avoid a ventriculotomy. In this patient, sustained ventricular tachycardia occurred 1½ months post-operatively but has been controlled with drug therapy during follow-up.

Additional surgical procedures included repair of a ventricular septal defect in one patient, aortic valve replacement in one patient and mitral valve commissurotomy in one patient. One patient required mitral valve replacement when localization of ventricular tachycardia to the posterior papillary muscle necessitated its excision. This latter procedure was done prior to the introduction of cryoablation. One patient had recurrent ventricular tachycardia in the early post-operative period with re-operation and further endocardial resection performed successfully four days after the initial procedure. This patient has remained free of arrhythmias during 63 months of follow-up.

Thirty patients survived the operation and were discharged. Two peri-operative deaths, both due to left ventricular failure, occurred within 48 hours of surgery. One of these patients developed aortic dissection during repair of aortic valve insufficiency and could not be weaned from cardiopulmonary bypass. The second patient, whose post-operative course was complicated by mediastinal hemorrhage, complete atrioventricular block and acute renal failure, died on the second post-operative day from left ventricular failure. A third in-hospital death occurred after a 6.5-month hospital course that was complicated by mediastinal bleeding, aspiration pneumonia, sepsis, gastrointestinal hemorrhage and sustained ventricular tachycardia associated with marked metabolic derangements.

Other complications occurred in an additional six patients and included

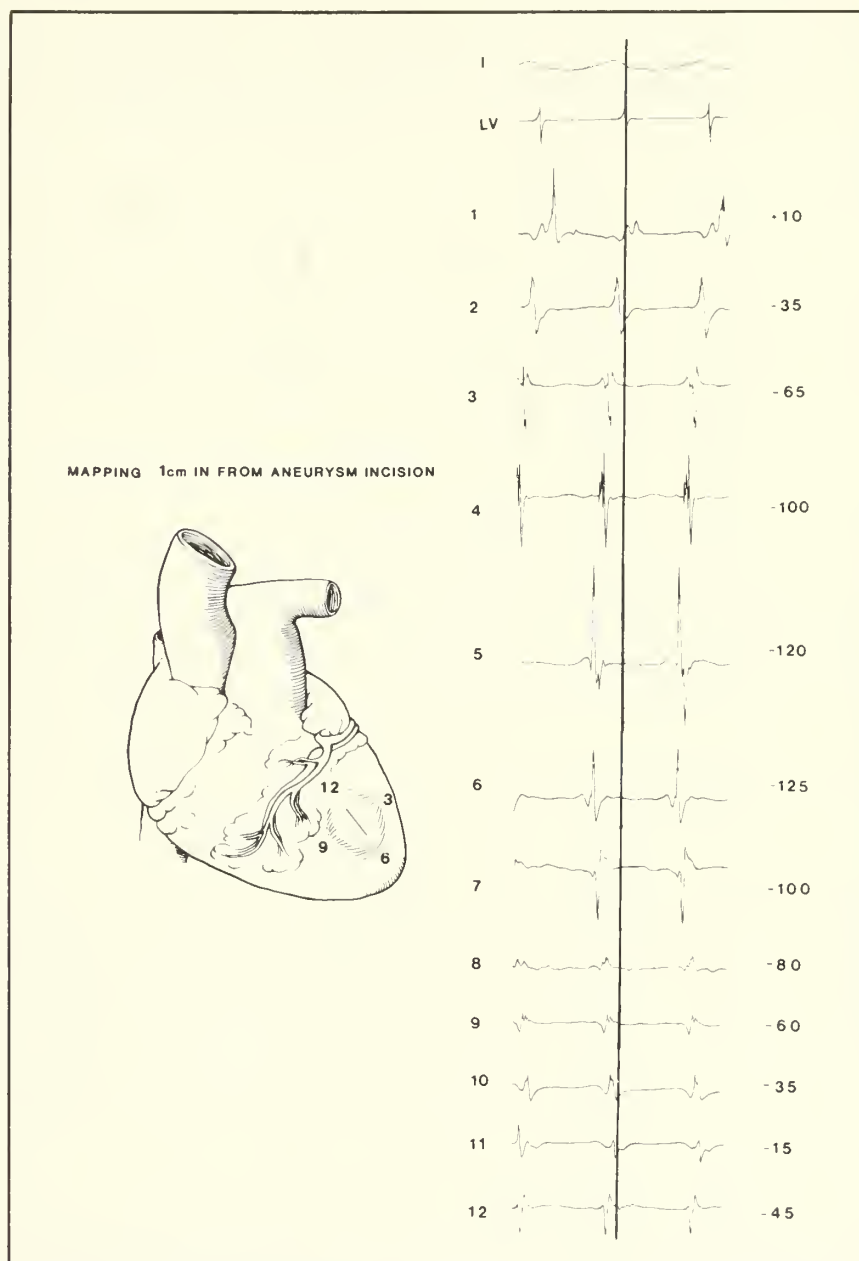


FIGURE 2: Intraoperative map obtained in a patient with prior myocardial infarction and left ventricular aneurysm. Locations around the circumference of the aneurysm are marked by a clock face and corresponding endocardial electrograms are labeled accordingly. A hand-held electrode is used to map at one centimeter circles inside the aneurysm incision. Using a left ventricular electrode (LV) as a reference point, local activation times are arranged for comparison. The site of earliest ventricular activation during tachycardia is seen at site #6 with an activation time 125 msec in advance of the activation recorded at the stationary LV electrode site. This area of endocardium was resected at the time of surgery with subsequent abolition of the tachycardia.

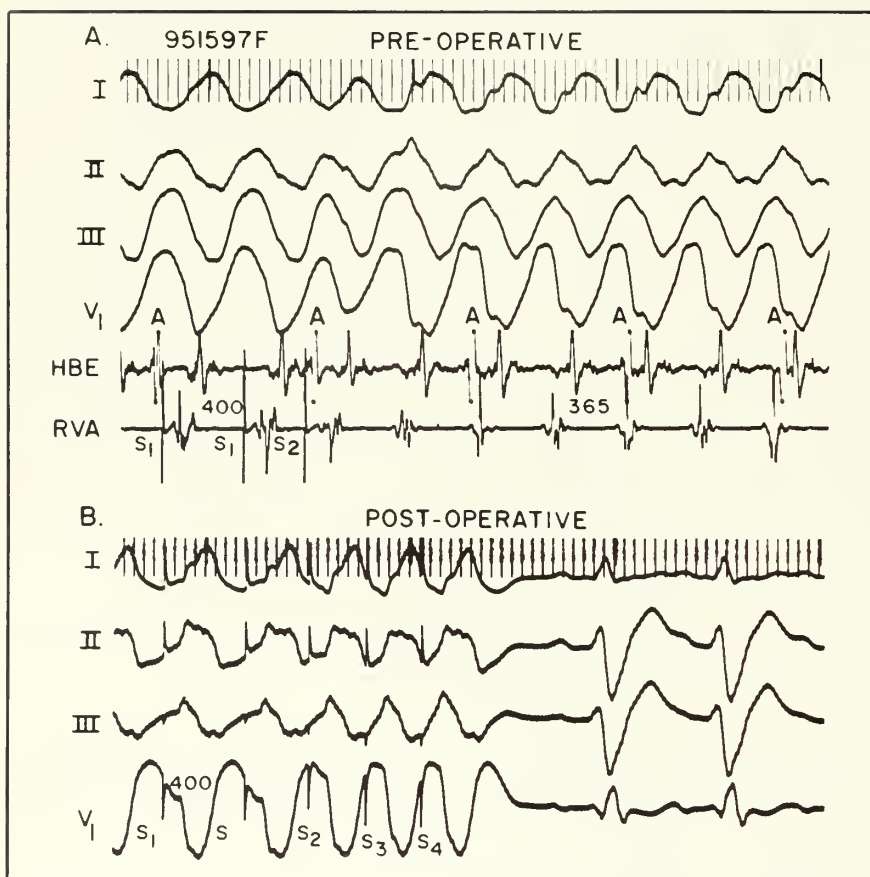


FIGURE 3: Electrophysiologic study, pre- and post-operative. Scalar leads, I, II, III and V₁, are displayed with His bundle electrogram (HBE) and right ventricular apical electrograms (RVA). Time lines are 50 and 10 msec intervals. Panel A: At pre-operative study, ventricular tachycardia was reproducibly initiated with one ventricular extrastimulus (S₂) during a basic pacing cycle length (S₁S₁) of 400 msec. This induced tachycardia was identical to the patient's clinical arrhythmia. Atrioventricular dissociation was apparent with atrial electrograms (A) labeled. Panel B: One week post-operatively, three ventricular extrastimuli (S₂S₃S₄) failed to initiate the tachycardia.

mediastinal bleeding in two patients, sepsis in two patients, and mediastinitis, complete atrioventricular block requiring permanent pacemaker, acute renal failure and gastrointestinal hemorrhage in one patient each.

Electrophysiologic Results

Pre-operatively, 31 of 33 patients underwent programmed ventricular stimulation with induction of ventricular fibrillation in one patient, sustained ventricular tachycardia in 25 patients and nonsustained ventricular

tachycardia in five patients. The remaining two patients underwent intraoperative electrophysiologic study only, at which time sustained ventricular tachycardia was induced in one patient and ventricular fibrillation in the other. All patients with ventricular fibrillation as their presenting clinical arrhythmia had sustained ventricular tachycardia induced at electrophysiologic study. Of the two patients who presented with symptomatic nonsustained ventricular tachycardia, one had sustained and one had nonsustained

ventricular tachycardia induced with programmed ventricular stimulation.

Useful endocardial mapping information was obtained at either pre-operative (20 patients) or intraoperative (18 patients) electrophysiologic study (Figure 2) in 27 patients. Left ventricular maps were not obtained in six patients due to hemodynamic instability during tachycardia, difficulty with catheter manipulation or inability to initiate tachycardia intraoperatively.

Utilizing the epicardial pacing wires placed at the time of surgery, programmed ventricular stimulation was performed in 26 of 30 patients five to 10 days post-operatively prior to discharge. Figure 3 compares the pre-operative and post-operative programmed ventricular stimulation results in the same patient whose mapping study is illustrated in Figure 2. While sustained ventricular tachycardia was reproducibly induced prior to endocardial resection, no arrhythmia was induced at the post-operative study despite using up to three ventricular extrastimuli. As illustrated in Figure 4, no arrhythmia was induced in 17 patients, nonsustained ventricular tachycardia in six and sustained ventricular tachycardia in two patients. Of the 22 patients with either ventricular fibrillation or sustained ventricular tachycardia induced at the pre-operative study, only two patients had sustained arrhythmias induced during the post-operative study.

Follow-up

Patients have been followed for a mean of 27.9 months (range 1-71). Spontaneous arrhythmia recurrence was documented by telemetric ECG monitoring, periodic 24-hour ECG recording and occurrence of tachycardia-related symptoms. Figure 5 depicts the results of all patients excluding the three pre-discharge deaths. Nineteen patients were free from nonsustained and sustained ventricular tachyarrhythmias during the follow-up period. Seven patients had episodes of nonsustained ventricular tachycardia.

of which six were symptomatic. Sustained ventricular tachycardia or fibrillation occurred during the follow-up period in four of 30 patients.

Six patients were discharged receiving antiarrhythmic drug therapy, three for symptomatic nonsustained ventricular tachycardia, two for sustained ventricular tachycardia or fibrillation and one for atrial fibrillation. An additional two patients with sustained ventricular tachycardia and three with symptomatic nonsustained ventricular tachycardia during follow-up were treated with antiarrhythmic drugs. Of the ventricular arrhythmia recurrences noted post-operatively, all four patients with sustained ventricular tachycardia or ventricular fibrillation required antiarrhythmic drug therapy while symptoms in six of seven patients with non-sustained ventricular tachycardia dictated pharmacologic therapy. Nineteen of 30 patients (63%) remained without antiarrhythmic drug therapy during the follow-up period.

Of the 30 patients reaching hospital discharge, 25 were alive at follow-up. Causes of death in the other five patients were left ventricular failure in four patients and sudden death, presumably due to arrhythmia, in one patient. Figure 6 illustrates the relationship among results obtained at post-operative electrophysiologic study, spontaneous arrhythmia recurrence and long-term outcome. The single patient with sudden death had sustained ventricular tachycardia both spontaneously (pre-operative and post-operative) and at post-operative electrophysiologic study. After failing multiple drug combinations, including amiodarone, this patient was discharged receiving a combination of flecainide and propafenone.

The recurrence-free (sustained arrhythmia) survival curve for the 30 patients who were discharged from the hospital is shown in Figure 7. All four sustained ventricular tachycardia recurrences occurred during the first four post-operative months. Thereafter, the prognosis for survival

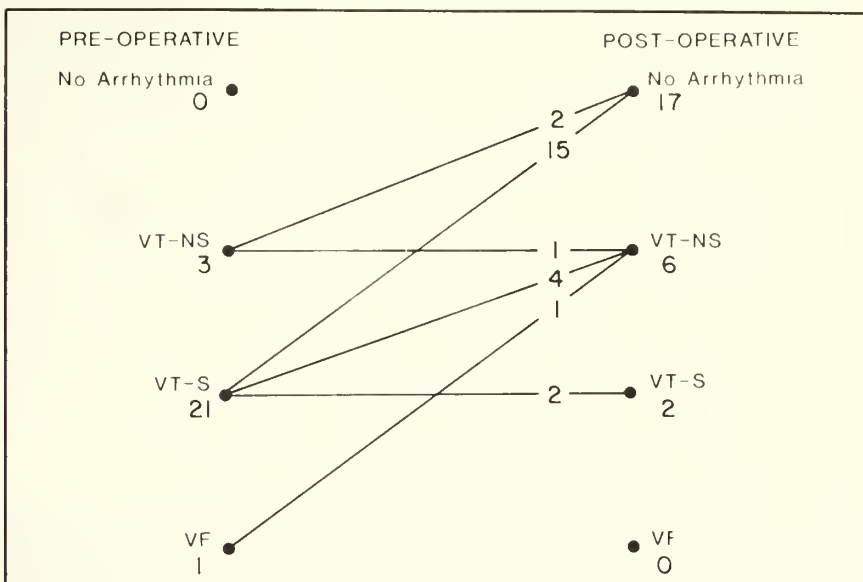


FIGURE 4: Programmed ventricular stimulation results are compared in 25 patients who completed both pre-operative and post-operative electrophysiologic studies. VT-NS, nonsustained ventricular tachycardia; VT-S, sustained ventricular tachycardia; VF, ventricular fibrillation.

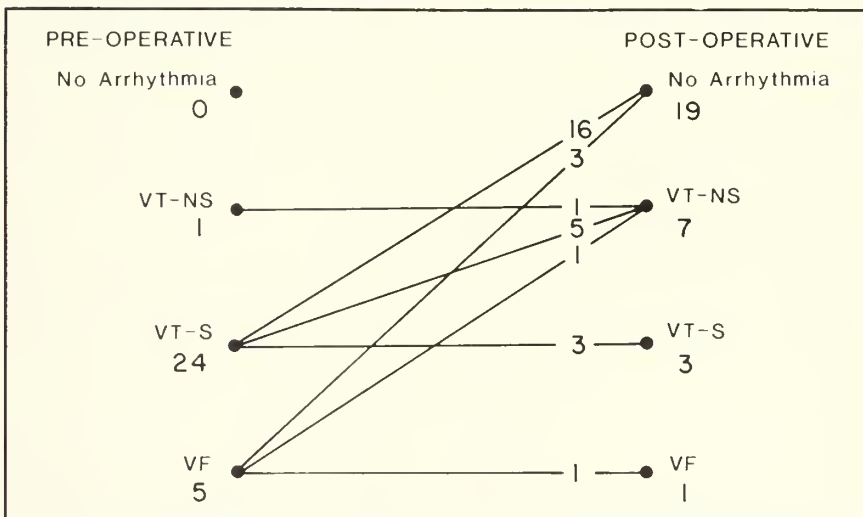


FIGURE 5: Spontaneous arrhythmia recurrence is compared in 30 patients. The three perioperative deaths are excluded. VT-NS, nonsustained ventricular tachycardia; VT-S, sustained ventricular tachycardia; VF, ventricular fibrillation.

without sustained ventricular tachycardia was favorable.

Discussion

In this series, electrophysiologically-directed surgery was performed in 33 patients, of whom 28 presented with

recurrent ventricular tachycardia or ventricular fibrillation that had been resistant to multiple antiarrhythmic drug regimens. The remaining five patients were undergoing cardiac surgery primarily for either coronary artery disease or congenital heart

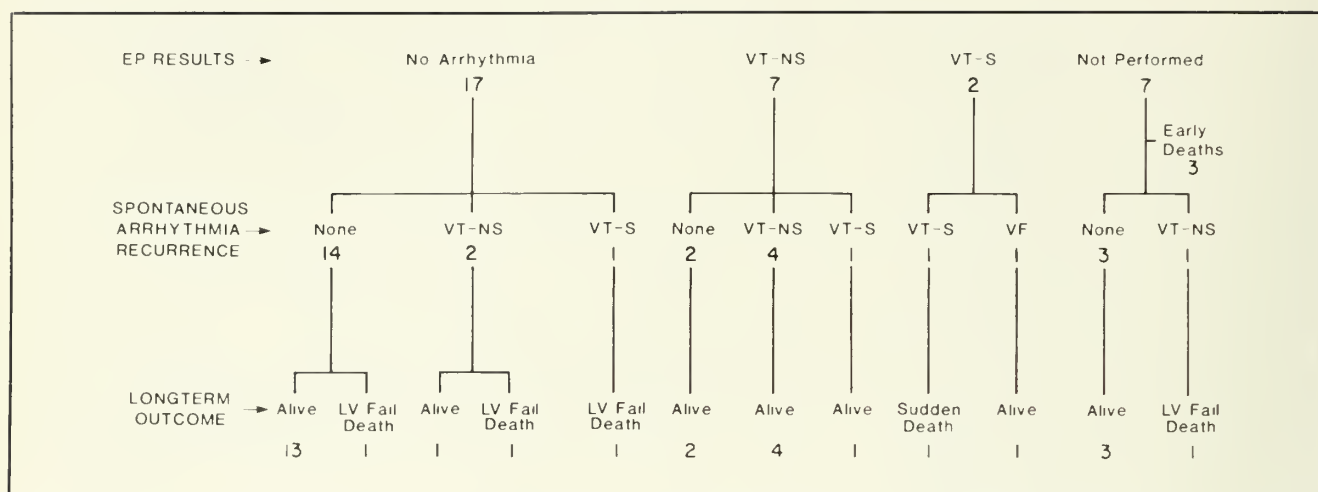


FIGURE 6: Post-operative electrophysiologic results, spontaneous arrhythmia recurrence and long-term outcome are displayed for the 33 patients. EP, electrophysiologic; LV fail death, death due to left ventricular failure; VT-NS, nonsustained ventricular tachycardia; VT-S, sustained ventricular tachycardia; VF, ventricular fibrillation.

disease. Our approach included a detailed pre-operative and intraoperative electrophysiologic map to determine the sequence of endocardial activation during the arrhythmia. Based on these findings, a specific surgical approach was undertaken, usually subendocardial resection beyond the usual borders of aneurysm resection with or without adjunctive cryoablation. Using this approach, peri-operative mortality was 9% and, of the survivors, 63% had an arrhythmia cure while 37% of patients required antiarrhythmic drug therapy during the follow-up period. Overall, an improvement in clinical arrhythmia, including either no arrhythmia or pharmacologically treatable arrhythmia, was attained in 83% of all patients. Long-term survival has been achieved for 25 of 33 patients, with only one death directly attributable to arrhythmia recurrence.

The technique described in this paper, extended endocardial resection, was first reported by Josephson, *et al.* in 1979.¹⁰ Since that report, this procedure has proved to be satisfactory with a surgical cure rate (no post-operative inducible or spontaneous sustained ventricular tachycardia and no antiarrhythmic drugs required) of 60%. An additional 25% of patients can be

controlled with medication post-operatively, which increases the effective operative control rate to approximately 85%.⁶ Our present series compares favorably with these results. More recently, in our experience and that of others,⁶ higher success results may be obtainable when endocardial resection is combined with cryoablation of areas deemed not approachable by resection.

Medical therapy of life-threatening ventricular tachyarrhythmias has yielded less than optimal results, especially in patients with coronary artery disease and left ventricular dysfunction.¹¹ Accordingly, various surgical techniques have been tried either alone or adjunctive to drug therapy to abolish these arrhythmias. Cardiac sympathectomy, section of the bundle branches, simple ventriculotomy and revascularization with aorto-coronary bypass grafts have yielded anecdotal successes but overall efficacy has been disappointing.⁶ A post-operative arrhythmia recurrence rate approaching 79% was reported by Harken, *et al.*⁵ in patients undergoing simple aneurysmectomy without electrophysiologic mapping.

In 1978 Guiraudon, *et al.*¹² described a new technique of encircling endocar-

dial ventriculotomy in which a near transmural incision is made circumferentially following the edge of an infarct or visible scar. Designed to interrupt and isolate the ventricular tachycardia pathway, this procedure has largely been abandoned due mainly to a greater degree of left ventricular dysfunction than that found with subendocardial resection.¹³

The anatomic substrate responsible for ventricular arrhythmias in chronic infarction is thought to reside in isolated bundles of surviving ventricular myocytes separated by fibrous connective tissue and connected to the larger mass of surviving myocardium at the edges of the infarction. This is seen in the 1-3 mm subendocardial layer of tissue surrounding the border of the infarct and may be responsible for re-entrant excitation as a cause of the ventricular tachycardia.¹⁴ Excitation maps during ventricular tachycardia in patients with coronary artery disease and previous myocardial infarction have shown earliest activation at the endocardial surface of the left ventricle along the margin of the infarction and commonly adjacent to an aneurysm. Accuracy of arrhythmia origin was verified after resection and abolition of the tachycardia.¹⁵

Localization of ventricular tachycardia origin in patients with coronary artery disease usually is determined by endocardial mapping. Epicardial mapping is not as useful since the earliest site of epicardial activation often does not overlie the endocardial site of tachycardia origin.¹⁶ This is a possible explanation for the lack of tachycardia suppression in our patient with an atrial septal defect who underwent epicardial mapping and cryoablation to an early epicardial site.

Intraoperative mapping was at times impossible or difficult to perform due to inability to initiate sustained ventricular tachycardia with programmed ventricular stimulation despite sustained ventricular tachycardia induction at the pre-operative electrophysiologic study. Potential explanations include effects of anesthesia, ventricular decompression, hypothermia, cardiac trauma with ventriculotomy and change in the level of circulating catecholamines.¹⁷ Because difficulty with intraoperative mapping may be encountered, preoperative mapping studies with electrode catheters are mandatory to serve as a guide during surgery. If tachycardia is rapid and hemodynamically unstable, a suitable map often can be obtained after the tachycardia rate has been decreased with intravenous procainamide. Accurate mapping allows endocardial resection to be limited to a minimal amount of viable tissue and yet to include the tissue that appears normal and without scar, but is involved electrically in the ventricular tachycardia. A precise map also allows application of cryoablation to foci located on the interventricular septum or papillary muscle, and consideration of ablative surgery in patients without discrete aneurysm formation. Prolongation of cardiopulmonary bypass time does not pose a problem if time allotted for mapping is limited.

Early post-operative programmed ventricular stimulation using the epicardial temporary wire electrodes placed at the time of surgery has been

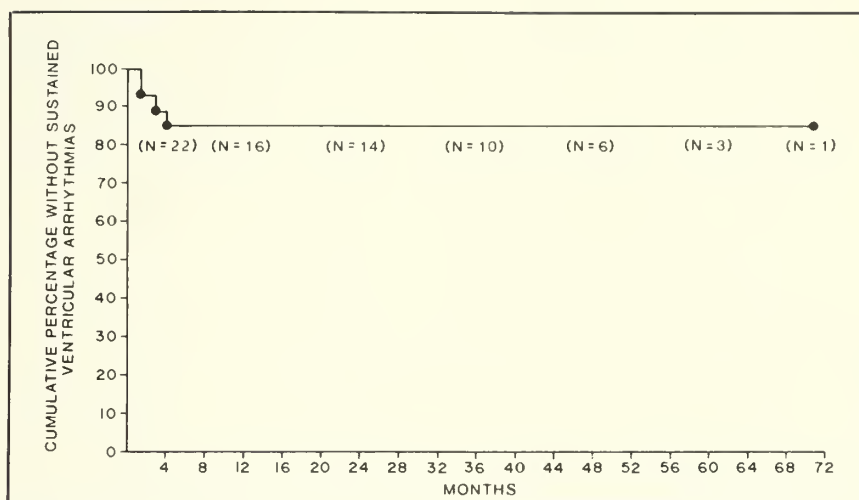


FIGURE 7: Analysis of freedom from sustained ventricular arrhythmias in the 30 patients who were discharged from the hospital. The numbers in parentheses indicate the number of patients who remained available for analysis.

shown to be safe, with a "negative study" (less than five consecutive ventricular beats with programmed ventricular stimulation) predicting a good outcome.¹⁸ Of the 24 patients in our study without sustained ventricular tachycardia at post-operative electrophysiologic study, only two had a sustained ventricular arrhythmia during the follow-up period (see *Figure 6*). The two patients with sustained ventricular tachycardia induced at post-operative studies had spontaneous sustained arrhythmia during follow-up and include the single sudden death in our series.

In addition to patients with drug resistant ventricular tachycardia, surgical indications have expanded to include patients with intolerable side effects to drug therapy or patients with medically controlled arrhythmias undergoing open heart surgery for congenital or atherosclerotic cardiac disease. Global left ventricular dysfunction is not an absolute contraindication to this surgical procedure, and preservation or improvement in hemodynamics has been reported.¹⁹ Cryoablation has allowed greater surgical success with its ability to "freeze" endocardium not accessible to usual excision such as septal sites,

areas near the conduction system and papillary muscle tissue. These lesions heal by fibrosis into firm, well delineated nonarrhythmogenic scars.²⁰

Conclusion

Electrophysiologic map-directed endocardial resection in combination with aneurysmectomy, coronary revascularization and cryoablation is effective for the treatment of patients with symptomatic ventricular tachyarrhythmias. Operative morbidity and mortality are acceptable. This procedure should be considered in patients with symptomatic ventricular tachyarrhythmias who are drug resistant, drug intolerant, or undergoing cardiopulmonary bypass for another indication.

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ROLE MODELING

Guest Editorial

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RICHARD C. POWELL, M.D.²
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ROLE MODELING or teaching by example is considered an important part of medical education. Teachers should be a positive influence and make a lasting impact on students; however, "good" role models are difficult to define more precisely. It has been suggested that there is usually no single ideal role model. Students collect a composite of characteristics from different teachers.¹ Nevertheless, outstanding clinical teachers often have several characteristics in common; they are knowledgeable and enthusiastic, their presentations are clear and well organized, they interact skillfully with students providing clinical supervision and demonstrating clinical skills, and they model professional characteristics.² Positive professional attitudes must be transmitted to students, and this is best accomplished by role modeling.³

Most of us remember one or more clinicians who served as our personal role models. They were clinical scholars with bedside expertise in history taking, physical examination and problem-solving skills. They were complete physicians, with competence in broad areas of clinical medicine.

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They demonstrated real concern for their patients; developed strong physician-patient relationships; and they knew how to communicate. They were physicians' physicians. There must be continual attention to our responsibility to be positive role models for new physicians.

In the fall of 1986, approximately 100 faculty, community physicians, house-staff and students associated with Indiana University School of Medicine

*"Positive Professional
Attitudes Must Be Trans-
mitted to Students, and
This Is Best Accomplished
by Role Modeling"*

participated in a conference on "Teachers as Role Models: The Impact on the Learning Process." Concepts and issues associated with teachers as role models were formulated.

The conference concluded that role modeling is intrinsic to the teaching process. To utilize role modeling as an effective teaching tool, faculty and all practicing physicians must constantly be aware that their interactions and attitudes influence students, not only within the spectrum of medical education but also as representatives of the profession. Medical schools must realize that the organization and philosophy of their educational program is reflected in students' professional identities and their future practice of medicine. The educational programs should constructively utilize role

modeling as an effective teaching tool to help instill within students the desire to gain new knowledge, to apply that knowledge as medical professionals and to effectively serve society.

In the present climate of challenge and change within medicine, it is important that the impact of medical role models on society be recognized. The image of the medical professional is being scrutinized today. Some important questions are being asked regarding the profession's service orientation: Is it decreasing? Is the profession's collegiality disappearing? And can there be a professional role without autonomy? It is important the medical profession concern itself with the professional model perceived by society as well as by students.

Dr. Richard J. Reitemeier of the Mayo Clinic is, and has been, a positive role model for many medical students and housestaff. We were fortunate to hear his thoughts about Teachers as Role Models at the Fall Teaching Conference. (His presentation appeared in the February issue of *INDIANA MEDICINE*, pp 160-164.) Those attending the conference felt his presentation was instructive and inspirational. We agree.

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Medicine's Lighter Moments

THE VACUUM CLEANER

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NOT ALL OF the things a surgeon does in his lifetime are esoteric and beneficial and fraught with service to the high-class type of humanity. Here's a case in point.

One evening, while working late in the hospital, I was called to the Emergency Room. There I found a very inebriated gentleman from whom I was unable to get a coherent story.

In the recapitulation of his situation, from direct questioning, physical examination and observation, it was clear

this unsavory individual had spent the evening consuming large quantities of alcoholic beverages. He finally reached the point where he had a blast of sexual desire.

Having no one available to expend his sexual drive upon, he looked around until he spied a vacuum cleaner. The front of the machine had a tubular attachment that the patient reasoned was of sufficient size to accommodate the turgid part of his anatomy.

He inserted his anatomical structure into the tubular opening and then made a grave error—he turned the switch on. The suction not only forced the appendage into the machine itself but got it far enough inside so that the belt, rug-beater and brushes attacked the intruder.

It required considerable maneuvering to extract the organ. The man was then rushed to the Emergency Room

for help.

Two hundred or so stitches were required to restore even some semblance of order to the structure involved. As any person who is acquainted with this particular portion of the anatomy under sexual stress realizes, there is a tremendous blood supply in this area. His blood loss, therefore, was considerable and the effort on our part to try to restore the continuity and effectiveness of this badly damaged structure was exceedingly difficult.

Some months later, I learned that, although the structure was not a thing of beauty, it at least functioned for its two major primary purposes quite satisfactorily.

My reason for relating this story is to emphasize the fact that there are major changes in the desires and wants of individuals who are under the influence of alcohol.

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Look-Alike and Sound-Alike Drug Names

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Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

Category:
Brand Name:
Generic Name:
Dosage Forms:

Category:
Brand Name:
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Tablets, Injection

PROTROPIN

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Transsexual Prisoner Sues for Lack of Medical Care

Reprinted from the Dec. 1, 1987 issue of *The Citation*, a medicolegal digest for physicians published by the AMA.

A prisoner who was a transsexual stated a valid claim under the Eighth Amendment for denial of medical treatment, a federal appellate court for Indiana has ruled.

The prisoner was serving a 35-year sentence for murder. She was a preoperative transsexual who had gender dysphoria. She had been chemically castrated (not surgically) by approximately nine years of estrogen therapy and had undergone surgical augmentation of her facial structure, breasts, and hips. She had feminine mannerisms and wore makeup and feminine clothing when permitted.

After sentencing, the prisoner was given a medical evaluation that supported a diagnosis of gender dysphoria. Nevertheless, it was decided to treat her as any other anatomical male.

From the beginning of her incarceration,

the prisoner was denied all medical treatment for her gender dysphoria and related medical needs. The medical director allegedly made humiliating remarks about her need for estrogen and once told her that he would make sure she would never receive the medication. She had suffered severe withdrawal symptoms as a result of the termination of estrogen therapy and had not been treated for silicone implant problems.

While incarcerated, the prisoner alleged that she had been the victim of attempted and completed acts of violence and sexual assault. She also claimed to have been subjected to harassment by prison officers and had been forced to strip in front of officers and other inmates.

The prisoner brought a civil rights action against prison officials and the medical director. The trial court dismissed the complaint for failure to state a claim.

On appeal, the court said that the

trial court had concluded that gender dysphoria was not a serious medical need. Other courts had rejected the idea that transsexual surgery was cosmetic surgery and concluded that such surgery was medically necessary. The court said that there was no reason to treat transsexualism differently from any other psychiatric disorder. The court concluded that the prisoner had stated a valid claim that, if proved, would entitle her to some kind of medical treatment. The court emphasized that the prisoner did not have a right to any particular treatment, such as estrogen therapy.

Finally, the court found that the prisoner had a right under the Eighth Amendment to be protected from the assaults that occurred as a result of the officials' alleged deliberate indifference. The court reversed the lower court's judgment and sent the case back for further proceedings.—*Meriwether v. Faulkner*, 821 F.2d 408 (C.A.7, Ind., June 4, 1987)

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Foods that may help reduce the risk of gastrointestinal and respiratory tract cancer are cabbage, broccoli, brussels sprouts, kohlrabi, cauliflower.

Fruits, vegetables and whole-grain cereals such as oatmeal, bran and wheat may help lower the risk of colorectal cancer.

Foods high in fats, salt- or nitrite-cured foods such as ham, and fish and types of sausages smoked by traditional methods should be eaten in moderation.

Be moderate in consumption of alcohol also.

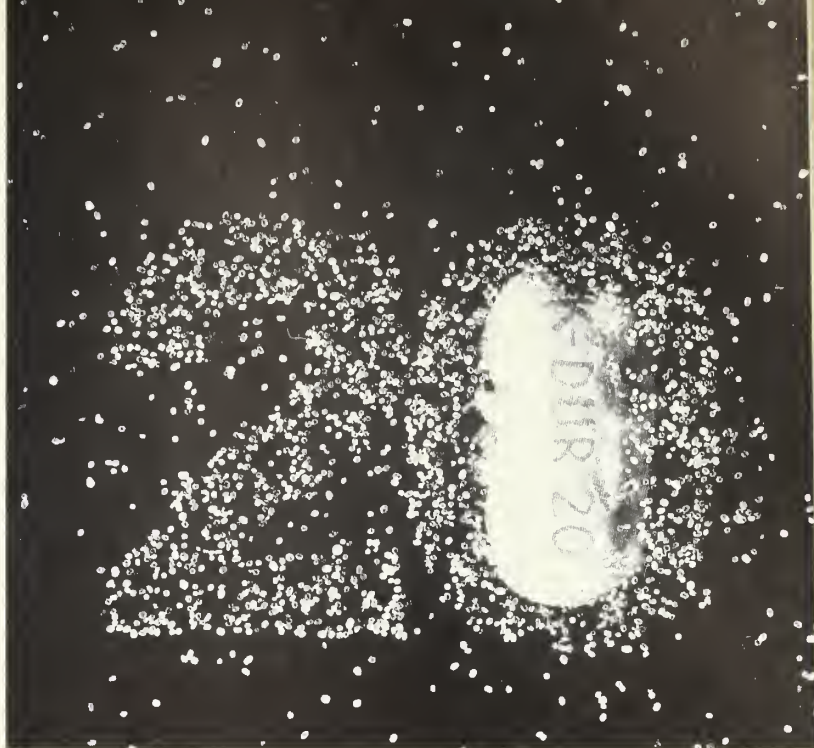
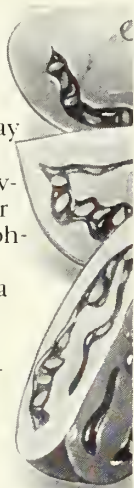
A good rule of thumb is cut down on fat and don't be fat. Weight reduction may lower cancer risk. Our 12-year study of nearly a million Americans uncovered high cancer risks particularly among people 40% or more overweight.

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Please see next page for brief summary of prescribing information

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K-DUR™ Microburst Release System[®]

(potassium chloride) Sustained Release Tablets

INDICATIONS AND USAGE: BECAUSE OF REPORTS OF INTESTINAL AND GASTRIC ULCERATION AND BLEEDING WITH SLOW-RELEASE POTASSIUM CHLORIDE PREPARATIONS, THESE DRUGS SHOULD BE RESERVED FOR THOSE PATIENTS WHO CANNOT TOLERATE OR REFUSE TO TAKE LIQUID OR EFFERVESCENT POTASSIUM PREPARATIONS OR FOR PATIENTS IN WHOM THERE IS A PROBLEM OF COMPLIANCE WITH THESE PREPARATIONS.

1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium-Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS, and OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS and WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS and WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3. Correction of acidosis, if present, with intravenous sodium bicarbonate.

4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate.

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that the simultaneous administration of CARAFATE with tetracycline, phenytoin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. The clinical significance of these animal studies is yet to be defined.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No evidence of drug-related tumorigenicity was found in chronic oral toxicity studies of 24 months' duration conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies have not been conducted.

Pregnancy: Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients, adverse effects were reported in 121 (4.7%). Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED

CARAFATE (sucralfate) 1-gm pink tablets are supplied in bottles of 100 and in Unit Dose Identification Paks of 100. The tablets are embossed with MARION/1712. Issued 3/84

References:

1. Korman MG, Shaw RG, Hansky J, et al. *Gastroenterology* 80:1451-1453, 1981.
2. Korman MG, Hansky J, Merrett AC, et al. *Dig Dis Sci* 27:712-715, 1982.
3. Brandstaetter G, Kratochvil P. *Am J Med* 79(suppl 2C):36-38, 1985.
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5. Lam SK, Hui WM, Lau WY, et al. *Gastroenterology* 92:1193-1201, 1987.

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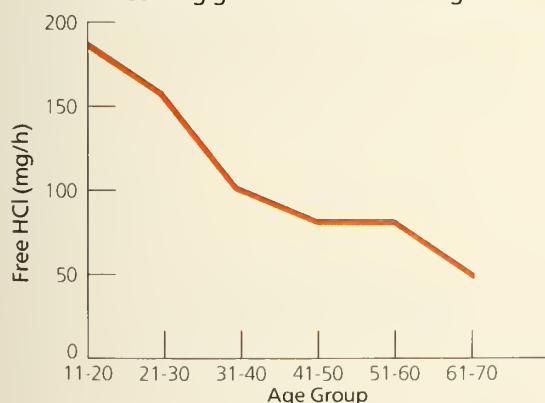
Specialized ulcer therapy

When advancing age signals reduced acid secretion



If your duodenal ulcer patient is over 55, decreased mucosal resistance is more likely to cause an ulcer than hypersecretion of acid-pepsin.¹ A tendency toward lower acid secretion with advancing age has been shown.^{2,3}

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Please see adjoining page for references and brief summary of prescribing information.

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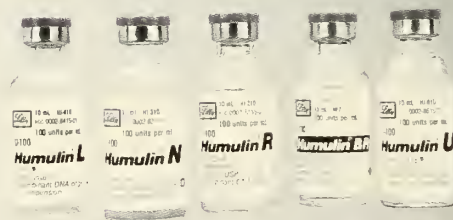
The clinical significance of insulin antibodies in the complications of diabetes is uncertain at this time. However, high antibody titers have been shown to decrease the small amounts of endogenous insulin secretion some insulin users still have. The lower immunogenicity of Humulin has been shown to result in lower insulin antibody titers, thus, Humulin may help to prolong endogenous insulin production in some patients.

Any change of insulin should be made cautiously and only under medical supervision. Changes in refinement, purity, strength, brand (manufacturer), type (regular, NPH, Lente®, etc), species/source (beef, pork, beef-pork, or human), and/or method of manufacture (recombinant DNA versus animal-source insulin) may result in the need for a change in dosage.

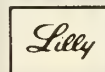
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DOCTORS' DAY

A Tribute to the Medical Profession

ANNE THROOP
President
ISMA Auxiliary

IT'S MARCH 30. You arrive at the hospital and someone is there waiting to pin a red carnation on your lapel. Why? It's Doctors' Day!

Years ago, in the small Georgia village of Fort Lamar, there lived a young woman named Eudora Brown. From early childhood she had been impressed with the selfless devotion of the medical profession's humanitarian service to mankind. In 1920 she married Dr. Charles B. Almond and moved to Winder, Georgia. There she became an auxiliary member.

In 1933 Mrs. Almond submitted the following resolution to her local auxiliary and it was subsequently adopted:

"Whereas, the Auxiliary to the Barrow County Medical Society wishes to pay lasting tribute to her Doctors, therefore be it resolved by the Auxiliary to the Barrow County Medical Society, that March 30, the day that famous Georgian, Dr. Crawford W. Long, first used ether anaesthesia in surgery, be adopted as "Doctors' Day", the object to be the well-being and honor of the profession, its observance demanding some act of kindness, gift or tribute in remembrance of the Doctors."

Thus emerged a most beautiful tribute to the medical profession—Doctors' Day!

The physician referred to in the above resolution was Crawford Williamson Long, who was born in



Anne Throop, president of the ISMA Auxiliary, pins red carnations on Dr. Willis W. Stogsdill and his son, Dr. Donald C. Stogsdill, during Doctors' Day activities at St. Vincent Hospital in Indianapolis, where both are anesthesiologists. The elder Stogsdill is immediate past president of the Marion County Medical Society—PHOTO BY LELIA CHERNISH

Danielsville, Georgia, on Nov. 1, 1815. He turned out to be an exceptional student. He was graduated from the University of Georgia at Athens, followed by medical studies first at Transylvania University at Lexington, Kentucky, and then at the University of Pennsylvania at Philadelphia, from which he was graduated in 1839.

Long developed an extensive practice in Jefferson, Georgia, and making housecalls on horseback was a daily part of his life. It was the early 1800s and, lacking our modern methods of entertainment, "laughing gas" parties were quite the thing. Dr. Long discovered that inhalation of ether would cause a person to experience no

pain or have any recollection of falls or blows while under its influence; he became convinced that surgery could be done painlessly if the patient was sufficiently etherized.

On March 30, 1842, sulphuric ether was administered in a surgical operation for the first time in medical history. Dr. Long expected no recognition or fame, saying, "My only wish is to be known as a benefactor of my race."

The red carnation was chosen as a symbol of Doctors' Day. This flower, which has a history of its own, was chosen because it denotes charity, sacrifice and courage. Doctors' Day affords an excellent opportunity to further good public relations for the medical profession through increased visibility in the community.

The Auxiliary helps celebrate this day in a number of different ways around the state, but the red carnation is always a part of it. In some small communities physicians are treated to special fare in the doctors' lounge, and luncheons and dinners are planned by others. An advertisement proclaiming Doctors' Day in the local newspaper draws public attention in some rural areas. In the larger communities the hospital auxiliaries are involved and will honor their own staff with a traditional tribute.

As president of the ISMA Auxiliary, I would like to draw special attention to the multi-physician families, and especially the father/son or father/daughter teams, where traditions are passed on and being of service to one's fellow man is carried out in the true spirit of the word. As auxiliaries we are proud to be a part of this world!

How Physicians Can Manage Risk and Decrease Liability Insurance Costs

ROBERT L. RUSSELL, J.D.
Chicago

TWO THOUSAND PERCENT rate increases and malpractice insurance cancellations are a result of the insurance industry's attempt to recoup profit losses after a period of financial mismanagement—not a new crisis in the courts. But many physicians are still turning the management of their insurance programs over to the same people who brought about the disaster in the first place.

Legislative reform of the tort system is important and needed, but tort claims are nothing new—the United States has been the most litigious society in the world for more than 20 years. There has been no great surge in liability cases or awards sufficient to create the kind of “tort crisis” the insurance industry would lead you to believe exists today.

The insurance industry, on the other hand, has undergone eight substantial, verifiable business cycles since the 1900s—the only difference was the length and severity. These cycles, not the courts, have been the primary factor in the wildly fluctuating cost and availability of liability insurance.

But the real issues for physicians are: how to absorb the much higher

costs of liability protection; how to reduce those costs; and, finally, how to keep a future crisis from pushing costs even higher.

The medical community can do a better job of providing insurance protection for itself than the insurance industry, if it makes a *serious* financial and management commitment. The potential for successfully developing stable and affordable professional liability protection lives within the medical community itself, not within the insurance industry. But it will take a direct commitment by the community to create its own alternatives through the assumption and management of the exposures it faces.

As the crisis eases, many physicians will simply heave a sigh of relief and begin to turn their attention to other matters without seeking a long-term solution to their liability problems. But wise physicians will begin to manage their own liability risk for their own benefit. This involves carefully analyzing the real costs of liability protection; determining how much is actually paid to resolve liability claims, including lawyers and other professionals; and carefully comparing that information with the cost of a fully insured liability protection program.

By anticipating and providing for costs already being borne and purchasing only that insurance needed to protect against unexpected claims, physicians often can make dramatic reductions in the cost of their protection from liability. By then managing their lawyers and claim professionals to be sure the legal work and associated fees are commensurate with claims and instituting loss prevention programs to reduce claims, a physician or group practice can become self-insured.

There has been a lot of talk about self-insurance lately but recent surveys show few groups have actually integrated the process into the management of their practices. Above all, it's important to realize that self-insurance, whether done individually or in risk retention groups, is not a panacea—it's simply a tool in the overall process of risk management.

But if the liability crisis is over, why bother?

Because the “crisis” is really only part of a predictable industry cycle and even as this one is leveling off, another is in the making.

A 1986 report of the Massachusetts Governor's Task Force on Liability examined the cyclical nature of the casualty business. “Like home mortgages, bank earnings and other financial activities, the insurance industry is subject to a recurrent, reasonably predictable cycle. That cycle, which has repeated itself five times since 1950, is characterized by the following sequence of market conditions:

- “The Hard Market: A scarcity of insurance, rapid price rises, rising revenues for insurers.

- “Stabilization: Prices stabilize at a plateau, high underwriting profit for insurers begins to attract capital into the industry, insurance stocks rise, then stabilize.

- “The Softening Market Price Wars: Prices are cut dramatically, buyers' market exists, insurance company losses and insolvencies become more frequent.”

In the 1979-84 period, high interest rates as well as high premiums made the insurance business particularly attractive. Many new companies entered the market, creating intense competition and a premium price war. With

The author has been a risk management professional for 17 years. He is president of Loss Reduction, Inc., a Chicago-based firm that provides risk management services.

Correspondence: Loss Reduction, Inc., 200 W. Adams St., Suite 2015, Chicago 60606.

high interest rates to attract investment dollars during the early eighties, the driving force behind marketing decisions for many liability carriers was the generation of cash flow. The industry put aside its traditional belief in underwriting profit and offset whatever losses they incurred through investment profits. Underwriting losses mounted, but the insurance industry continued to be profitable.

Insurers underpriced their products during these times of high interest rates to collect premium cash flow for investment; but as interest rates fell and profits diminished, weaker carriers left the market and insurance became scarce. So premiums began to rise again. This phenomenon occurred much like other supply and demand cycles that have hit the industry with one important difference—its length. This recent cycle spread itself over seven consecutive years beginning in 1978. Previously, the longest pricing cycle was for five years in the 1960s.

When claims came in on the low-priced policies at the same time interest rates came down, the industry instituted massive rate increases or withdrew coverage to cover its losses. To justify these increases, the industry undertook a massive marketing campaign to focus attention on litigation and tort reform.

But managing risk takes more than looking beyond media hype and insurance industry advocates to anticipate the real dynamics of the situation. It also involves focusing carefully on and managing your own situation

to your best advantage to avoid the roller coaster ride of liability protection costs. Many physicians and group practices tend to trust their broker, insurance company or law firm to manage their liability risk without realizing that each has a point of view that is not necessarily parallel with the physician's goals and objectives. A coordinated program of risk management will not totally avoid liability problems, but it will better anticipate problems so you can be prepared for them and have a much better negotiating position should a problem escalate.

A truly effective risk management plan is grounded upon a foundation of insurance, litigation and claims settlement management; establishment of realistic and timely loss reserves; and implementation of loss prevention techniques.

For instance, every physician can begin to institute his or her individual risk management program simply by becoming more aware in dealing with patients and employing a few basic loss prevention techniques.

Keep in mind that an attorney needs only a very simple set of facts to bring a malpractice case. The most basic loss prevention techniques remain the most important. Here are a few examples:

1. Do not diagnose over the phone; avoid giving detailed telephone instructions; if you do give instructions, write them on the patient's chart.

2. Do not make statements that could be construed as admissions of fault, i.e., "I might have made a mistake," or "Perhaps I was wrong."

3. Put everything in the patient's history. Do not assume circumstances are self-evident. If a patient is not cooperative, put it down.

4. Be factual, and not overly optimistic about a prognosis or a result.

5. Make sure the patient understands the range of anticipated costs for a given procedure.

6. Let the patient ask questions and respond even to the most basic ones: A. use simple language to explain the nature of the ailment; B. describe the nature of treatment; C. give the patient the probability of success and alternative treatments; D. tell the patient the risk of the procedure, including unfortunate results or unforeseen conditions within the body.

There is every reason to believe that the liability insurance market will continue to soften as more capital is attracted by higher premiums. To what degree the market will improve remains to be seen. When physicians are confronted with high liability exposure, they can always choose to simply ride the roller coaster of liability rates up and down. Or, they can seize the opportunity to get off. By evaluating available options to remove the influence of the casualty cycle on your practice and taking charge of this increasingly important area of your cost of doing business, liability protection cost can be significantly reduced over the long term. The benefits will flow directly to the physician who chooses to manage the problem rather than simply letting it happen.

Farewell to the Man Who Went the Extra Mile

A WELL KNOWN FIXTURE in Indiana medicine has retired from the ISMA work force. Absent, but not likely to be forgotten, is Howard Grindstaff, who devoted the past 30 years to helping Indiana physicians.

At an average rate of 40,000 miles a year, Howard logged about 1.2 million miles on the state's roads and highways since becoming a "field secretary" in 1958. As one of ISMA's roving trouble-shooters, he visited physicians in their offices, at hospital staff meetings, at county society meetings—even on golf courses—in all of Indiana's 92 counties at one time or another.

Originally, Howard's territory was the northern portion of Indiana at a time when Bob Amick had southern Indiana and Wayne Worick handled liaison duties in the central portion of the state. But, as time marched on, and as "field services representatives" came and went, Howard often found himself trying to commute to more geographical areas than possible for one person. When he retired at the end of December he was back where he started—covering the northern area of the state.

Howard, who turned 65 last year, is now relaxing at home in Indianapolis with his wife Phyllis. There's more time for golfing, boating, fishing and bridge. It's a quieter, less hectic life, a life that will take both of them some getting used to. But it certainly hasn't been a life without memories, some good, some not so good.

Howard was graduated from Arsenal Technical High School in Indianapolis just before the infamous attack on Pearl Harbor. Soon enough, he became one of millions of Americans in uniform. He was a gunner on a B-17 when the bomber was shot down. He was captured and spent the next 13



Howard Grindstaff retires after 30 years with ISMA

months in a German prison camp.

After the war, Howard went to work for an Indiana dental supply company and remained with the firm 12 years. That's when he joined the ISMA, which was then headquartered in the old Hume-Mansur Building in downtown Indianapolis. He settled into his new traveling job and everything went well for about 20 years. He had developed a severe heart problem and underwent a double-bypass operation, which slowed him down only for a short while. He was soon back where he was happiest—on the road, hobnobbing with doctors everywhere.

A couple of years after his surgery, Howard was named a Sagamore of the Wabash by Governor Otis Bowen. Then, in 1982, by acclamation of the House of Delegates, he was appointed an honorary member of the ISMA, a title he shares with only five other living recipients. Proud moments—cherished moments. Early last year, Howard's heart problem resurfaced and he again underwent bypass surgery. He toughed it out and, much to the amazement of everyone, insisted

on hitting the road again.

At a time when most people thought he would surely retire, Howard buckled up and headed north. Before he'd agree to retire, he just had to "do it one more time." He had it his way.

Besides his duties in field services, until recent years Howard also wore a second hat as official lobbyist for the Association; eventually, he helped develop the Indiana Medical Political Action Committee and for a while served as its executive director.

Indeed, at one time Howard knew plenty of Indiana legislators, but his list of physician friends is even longer.

One of the doctors he's known for many years is Lowell H. Steen of Highland, a former ISMA president (1969-70). He told *INDIANA MEDICINE* that Howard's retirement is a "great loss to State Medical, and all of us who worked closely with him through the years wish him well. . . ." Dr. Steen said he will remember Howard for "his jovial, but efficient, approach to the affairs of the state association and his dedication to the medical profession."

Another former ISMA president, Dr. Peter R. Petrich of Attica (1971-72), recalls that he first met Howard "on a very cold, windy, rainy golf course at a district meeting 30 years ago. Being on that course together indicated what an idiotic pair of golf nuts we were and continue to be. . . ." On a serious note, Dr. Petrich credits Howard with always "putting his best foot forward for the membership, the Association or whomever he was working with, wherever."

No one's life can be easily condensed in a few paragraphs. There are simply too many details, too many anecdotes to share. But it doesn't require much time or space to say, "Godspeed, Howard!" And thanks for going that extra mile. . . .MTB

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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Neurofibromatosis

CONTINUED FROM PAGES 207-215

1. If a four-year-old child has ten *cafe-au-lait* spots larger than five millimeter in diameter, which of the following statements is true?
 - A. The child has definite evidence of neurofibromatosis type 1.
 - B. The child has definite evidence of neurofibromatosis type 2.
 - C. The child does not have sufficient criteria to establish a diagnosis of NF-1; however, the diagnosis cannot be ruled out and the child must be followed for the appearance of additional signs.
 - D. The diagnosis of neurofibromatosis can be excluded completely as the child has only one criterion.
2. Acoustic neuromas:
 - A. Are a common feature of NF-1, occurring in 10-15% of patients.
 - B. Generally appear by six years of age.
 - C. May be either unilateral or bilateral in NF-2.
 - D. Are best treated conservatively with radiation therapy.
3. Which of the following statements concerning the genetics of neurofibromatosis are false?
 - A. The inheritance of both NF-1 and NF-2 is autosomal dominant.
 - B. Approximately half of the individuals with NF-1 do not have a family history of NF and represent a new mutation.
 - C. In more than a fourth of the cases, both NF-1 and NF-2 may be seen within the same family.
 - D. The gene locus for NF-1 is on chromosome 17 and NF-2 is on chromosome 22.
4. The patterns of growth in neurofibromatosis type 1 are:
 - A. No different from the general population.
 - B. Differ in that individuals with NF have a higher incidence of microcephaly and short stature.
 - C. Differ in that individuals have a higher incidence of macrocephaly and short stature.
 - D. Differ in that individuals have a normal head size but are taller than expected.
5. Learning disabilities and mental retardation are:
 - A. A pathognomonic part of NF-1 seen in virtually all individuals.
 - B. Occur at a rate no different from the general population.
 - C. Affect somewhere between 30 and 55% of individuals with NF-1.
 - D. Affect 75-80% of individuals with NF-1.
6. Ocular manifestations of NF are common. Which of the following is true?
 - A. Pulsating exophthalmus is a sign of sphenoid wing dysplasia.
 - B. Iris nodules are a defining feature of NF-1 and are seen in 70% of newborns with this disorder.
 - C. Optic nerve gliomas occur with NF-1 and are usually malignant astrocytomas.
 - D. Presenile cataracts are associated with NF-1.

FEBRUARY CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the February 1988 issue: "Preoperative and Postoperative Radiation Therapy in Non-Small-Cell Lung Cancer."

- | | |
|------|-------|
| 1. b | 6. a |
| 2. a | 7. b |
| 3. a | 8. a |
| 4. a | 9. a |
| 5. a | 10. b |

CONTINUED ON PAGE 282

Answer sheet for Quiz: (Neurofibromatosis)

- | | |
|------------|-------------|
| 1. a b c d | 6. a b c d |
| 2. a b c d | 7. a b c d |
| 3. a b c d | 8. a b c d |
| 4. a b c d | 9. a b c d |
| 5. a b c d | 10. a b c d |

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To be eligible for this month's quiz, send your completed, signed application before April 10, 1988 to the address appearing at the top of this page.



AUXILIARY REPORT

Anne Throop, Indianapolis
ISMA Auxiliary President 1987-88

The 44th Annual Meeting of the Indiana State Medical Association Auxiliary will be held April 26, 27 and 28 at the Holiday Inn, Union Station—Indianapolis.

Marion County Medical Society Auxiliary will host this convention and we welcome ALL auxiliaries and spouses. MAL and county auxiliary members are especially encouraged to attend and participate in all meetings, workshops and social functions. Business will be conducted but there will be time for you to shop, visit museums, swim (indoors at the Holiday Inn), jog at the IUPUI track, visit the '500' track/museum, stroll downtown

along the canal, or whatever gives you pleasure.

Dinner Tuesday evening (honoring former ISMA-A presidents) will be at the lovely Canterbury Hotel, a special treat being planned by Anne Pantzer.

Following Wednesday's luncheon, AMA-ERF will conduct an auction, always a fun event.

Mini workshops are planned for Wednesday afternoon. Specific topics to be covered are membership, health, legislation and AMA-ERF. County presidents-elect and 1988-89 chairmen are specifically invited to attend but everyone is welcome. Come learn and share information on these vital topics

as we continue to pursue Anne's theme, Advocates for Medicine.

Wednesday evening will be a gala affair with dinner and entertainment in Victoria Station. Spouses are invited to this event.

Thursday we will have a luncheon and installation ceremony for Ann Wrenn and say thank you to Anne Throop for a spectacular year as ISMA-A president.

Please plan to attend. We look forward to seeing you in April at the Holiday Inn, Union Station—Indianapolis.—Sally Morton and Carole Wainscott, Co-Chairmen, 1988 ISMA-A Convention

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CANCER CORNER

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IMPROVED TREATMENT REGIMENS IN CURABLE CANCER, April 22, 1988. Testicular cancer and small cell lung cancer are two highly chemosensitive solid tumors. As we approach the end of the 1980s, there is emerging evidence that significant advances are happening in small cell lung cancer with improved therapeutic regimens.

Included in the session topics: Advances in small cell lung cancer, the role of prophylactic cranial irradiation, and the role for thoracic irradiation in limited small cell lung cancer; G.U. tumors, especially testicular cancer, advances in improving the quality of life for patients undergoing cystectomy for invasive bladder cancer.

Guest speakers include: Paul A. Bunn, Jr., M.D., University of Colorado Health Science Center; Robert L. Comis, M.D., Fox Chase Cancer Center; William K. Evans, M.D., Ontario Cancer Foundation; Frank A. Greco, M.D., Vanderbilt University; Andrew T. Turrisi, M.D. Registration fee: \$100. For further information, contact Carol Lewis, (317) 274-8353.

AIDS, HEPATITIS, AND BLOOD TRANSFUSION: IMPACT ON SURGICAL PRACTICE, May 27-29, 1988. To be held at the Omni at Charleston Place, Charleston, South Carolina. Patients and health care workers alike are concerned about the risk of acquiring AIDS, hepatitis, and other infectious diseases during surgery. Techniques will be presented which the surgeon may use as alternatives to blood transfusion, including stimulation of red cell production, cell saving,

hemodilution, artificial bloods, and other forms of volume expansion. Another portion of the program will be devoted to the legal and ethical implications surrounding AIDS. Registration is \$375. For information, call Un-Conventional Meeting Experts, (619) 692-9115.

FIRST INTERNATIONAL CONFERENCE ON SUPPORTIVE CARE IN ONCOLOGY (ICSCO), August 23-25, 1988, Brussels, Belgium. This conference has been designed to deal with current issues of major importance in the ever-changing approaches to the care and clinical support of cancer patients. Until now there has been no single venue to join leaders in all aspects of cancer supportive care with other cancer care professionals. It is with this need in mind that ICSCO has been established. The meeting location will alternate between Europe and North America on an annual basis. The conference is sponsored as part of an educational program of the Institute Jules Bordet Centre des Tumeurs de l'Université Libre de Bruxelles and the University of Maryland School of Medicine.

The conference will focus upon recent advances in infusion devices, the vitally important topic of sustainable vascular access via catheter for blood sampling, chemotherapy, infusion and administration of antimicrobials and blood products, and antitumor therapy including cytotoxics, irradiation and bone marrow transplants. Although not specifically addressed in the plenary sessions this year, multiple

other supportive care issues of current importance such as pain relief, amelioration of nausea and vomiting, and the psychological needs of cancer patients, will be open for discussion in the afternoons.

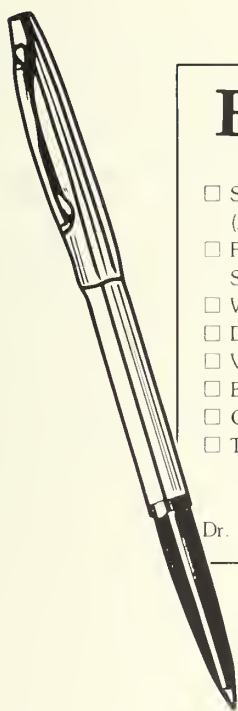
All sessions will be conducted in English. You may contact ICSCO, 900 State Rd., Princeton, N.J. 08540, or call 1-800-821-5678.

NEW PUBLICATION: The National Hemophilia Foundation, "Surgery in Hemophilia." This publication provides important guidelines for the surgical management of the patient with hemophilia. Included is important information on considerations prior to hospitalization and hospital management. Virtually any surgical procedure may now be performed safely on the person with hemophilia without an inhibitor, regardless of the severity of disease. Careful and systematic attention to the points approach has reduced the morbidity for such patients to the same level as for individuals without hemophilia. Special thanks are extended to W. Abe Andes, M.D. and Louis Aledort, M.D., authors of the publication. For copies please contact: Ruth Saylor, NHF Literature Distribution Center, 2026 Lee Rd., Cleveland Heights, Ohio 44118.

Initial Announcement: MARK YOUR CALENDARS, The Ohio Valley-Lake Erie Association of Cancer Centers, 11th Annual OLACC Meeting, June 10-11, 1988. Host Institution: Methodist Hospital of Indiana, Inc., Graduate Medical Center.

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In addition to providing benefits to physicians, the *Directory* is a practical means of providing financial support for INDIANA MEDICINE.

All diplomates of the ISMA are invited to enter a professional card in the *Directory*.



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A foundation for charitable, educational, and scientific purposes, organized by the ISMA as an endowment fund to support the educational mission of the Association and INDIANA MEDICINE.

Bequests, legacies, devises, transfers or gifts to the Foundation or for its use are deductible for federal estate and gift tax purposes, in accordance with the Internal Revenue Code.

The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

*"for religious, charitable, scientific,
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I.U. School of Medicine Gets \$5 Million Grant for Alcohol Research Center

The National Institute of Alcohol Abuse and Alcoholism has awarded more than \$5 million to establish an Alcohol Research Center at the Indiana University School of Medicine.

The I.U. Alcohol Research Center will operate as a Core Center primarily located within the I.U. Medical Center complex. It will support the work of new investigators as well as several established researchers who already hold 10 NIAAA-supported grants, two career development awards and one institutional training grant.

Director of the Alcohol Research Center is Dr. Ting-Kai Li, associate dean for research and distinguished professor of medicine and biochemistry.

Long-Term Care Insurance Needs of the Elderly Targeted for Analysis

The Indiana State Budget Agency has received a grant of \$344,785 for a 24-month study to develop long-term insurance programs for the elderly. The grant is from the Robert Wood Johnson Foundation.

The project will involve working

with private sector insurance companies to identify appropriate benefits for long-term care of elderly citizens. The project staff will estimate the financial impact of such insurance on Medicaid costs and will provide information for the elderly about insurance options for the long-term care.

Similar research programs are endowed for Wisconsin, Connecticut and Massachusetts. The total grant for these projects amounts to \$3.2 million.

Methodist Hospital Acquires Urogynecology Fellowship

Methodist Hospital of Indiana has acquired a one-year fellowship in urogynecology under the directorship of J. Thomas Benson, M.D. The first fellow is Andrew Agosta, M.D., of Detroit, Mich.

The urogynecology fellowship is designed to provide a high quality educational and clinical experience to graduates of an accredited Ob/Gyn residency program, according to Dr. Benson. Such graduates, he explained, should desire competency as subspecialists in the management of patients with urogynecologic conditions, with emphasis on urinary and anal incontinence and pelvic floor support problems.

Clinical pathophysiology of urogynecologic conditions will be

stressed, with emphasis on prevention, diagnosis, treatment and rehabilitation of the patient with these conditions.

Research in the subspecialty will be required of the fellow. The fellow will be involved with the teaching faculty and will be evaluated formatively and summatively.

CME Quiz . . .

CONTINUED FROM PAGE 265

7. Patients with NF-1 often worry about malignancies. Which of the following is true?
 - A. The majority of individuals with NF-1 will die of a malignancy prior to 50 years of age.
 - B. Individuals with NF-1 have no increase in risk of malignancies.
 - C. Individuals with NF-1 are at increased risk for neurofibromas and brain tumors.
 - D. Individuals with NF-1 are at an increased risk for cutaneous melanomas.
8. Dermal neurofibromas are soft lesions which usually cause only cosmetic problems. Problems associated with other neurofibromas include the following:
 - A. Spinal cord compression from growth of neurofibromas through vertebra foramen.
 - B. Overgrowth of an extremity involved with a plexiform neurofibroma.
 - C. Gastrointestinal bleeding or pain from neurofibromas in the abdomen.
 - D. All of the above.
9. An orthopedic problem not associated with NF-1 is:
 - A. Congenital dysplasia of the sphenoid bone
 - B. Pseudoarthrosis of the tibia
 - C. Spondylolisthesis
 - D. Scoliosis
10. Neurofibromatosis 2 (bilateral acoustic neuromatosis) is much less common than NF-1. Follow-up of these individuals should include which of the following?
 - A. Ophthalmologic evaluation for cataracts.
 - B. Periodic audiograms or brainstem auditory evoked responses.
 - C. Periodic neurologic exams to screen for central nervous system gliomas, meningiomas or schwannomas.
 - D. All of the above.

HAMARTOMAS

Commentary

We sometimes encounter clumps of anomalous tissue in the lungs or kidneys, that are not malignant tumors and really are unusual developments of tissues that would ordinarily belong to a part or an organ. They certainly aren't malignant, and they aren't like the ordinary benign tumors that we think of.

An example is a chondro-myofibroma in a lung or an angio-myolipoma in a kidney.

They are a "mixed bag." It is helpful to think of them as a developmental error or tissue that has "missed the mark." And they are often called "hamartomas" for short.

When the Apostle Paul was asked to define sin, he pointed to the archer who had failed to hit his target—"hamartanein" in Greek—and said that was "sin" = "missing the mark."

I don't mean that there is anything sinful about these tumors, but it is useful to think of them as hamartomas, or clumps of tissue that "missed the mark."—R.J. Noveroske, M.D., Newburgh

Short Takes...

- The American College of Emergency Physicians has been resurveyed by the Accreditation Council for Continuing Medical Education and is re-accredited for six more years as a sponsor of CME for physicians.

- The American Board of Family Practice and the publishing division of the Massachusetts Medical Society, publishers of the *New England Journal of Medicine*, are now publishing a new quarterly journal, *The Journal of the American Board of Family Practice*. The first issue appeared in January.

- A recent issue of *JAMA* reports that the University of Pennsylvania School of Medicine no longer requires specific undergraduate courses for admission. The school defines the knowledge and skills it considers essential for students in medicine, but will not specify courses that are prerequisite. In the report, the hope is expressed that other institutions will do the same.

- "Perioperative Red Cell Transfusion" is the title of a consensus development conference to be held June 27-29 in the Masur Auditorium, Bethesda, Md.

- Dr. S. Gopal Raju of Marion has announced his intention to run as a Democrat for Governor of Indiana. Dr. Raju arrived in the United States in 1963 and subsequently was made a

naturalized citizen. He says his platform for the election campaign will include a top priority for AIDS control. He plans, if elected, to establish a Governor's Free Circuit Medical Clinic to serve the poor.

- Special research for Converse, Inc. indicates the possibility that stress fractures may be predicted and prevented in accordance with design of shoes. Sneakers were the type of shoe concerned. The report says the geometry of the foot and its loading—the distribution of weight on a specific location—predetermine when and where metatarsal stress fractures will occur.

- Marion Laboratories has published "Marion Managed Care Digest 1987" and will follow this with a Digest for 1988 which will appear in a few months. The SMG Marketing Group of Chicago conducted the special mail and telephone survey of the industry's HMOs. A total of 688 HMOs, including 632 in operation and 56 under development, provided information for this report.

- "Cochlear Implants" will be discussed May 2-4 during a National Institutes of Health consensus development conference at the Masur Auditorium, Bethesda, Md. Physicians wishing to attend should write to Nancy Cowan, Prospect Association, Suite 500, 1801 Rockville Pike, Rockville, Md. 20852.

Is the Federal Government Wasting Cancer Dollars?

American taxpayers are not getting their money's worth when it comes to cancer prevention, according to an editorial in the November/December issue of "ACSH News & Views," a publication of the American Council on Science and Health.

"In 1987, the federal government spent more than \$2.8 billion on cancer prevention," said Kristine Napier, author of the editorial. "Far too much of this money was spent on misguided battles against environmental agents which are at most minor causes of cancer. Far too little was spent on effective campaigns against the true enemies."

The bulk of "cancer prevention" tax dollars goes to the Environmental Protection Agency (EPA), which spends the money on regulatory efforts aimed at carcinogens in the workplace, environment, food additives, and industrial products, Ms. Napier wrote. Yet substances of these types "cause very few cases of cancer," she said. "The EPA itself estimates that there are only 11,000 cases of environmentally induced cancer in this country each year. The rest of the one million cases of cancer that occur annually are attributable to diet, viruses, sexual practices, alcohol, and especially tobacco, or are of unknown origin."

Physician Recognition Awards



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



Bao, Danny C., Carmel
Daniel, Gerald O., Greenfield
Feliciano, Elpidio G., Clinton
Ferry, Francis A., Indianapolis
Foley, Phillip D., Middletown
Geurkink, John W., Terre Haute

Hobbs, Hudner L., Indianapolis
Hunter, Harry L., Evansville
Larson, Michael S., Munster
Mason, Lester M., Terre Haute
Mazdai, Abouzarjomehr, Connersville

Nuygen, Chung T., Indianapolis
Oliver, Randall L., Evansville
Scheurich, Manley K., Oxford
Shah, Priya, Fort Wayne
Tharp, Stephen D., Frankfort
Wigutow, Marcus, Merrillville

NEWS NOTES

Medical Alumni Day Moves to Saturday

Rather than being held on Wednesday, the Medical Alumni Day at the Indiana University School of Medicine will be observed on Saturday, May 21. The change is in response to suggestions from out-of-state alumni who indicated that a weekend date would make it easier to attend.

Classes planning reunions this year include 1983, 1978, 1973, 1968, 1963, 1958, 1953, 1948, 1943 and 1938. A brunch on May 21 in honor of these classes will begin at 11:30 a.m. It will be served under the traditional red-and-white tent adjacent to the Lincoln Hotel on the Indianapolis campus.

The School of Medicine is planning to expand its Continuing Medical Education (CME) program for physicians attending Medical Alumni Day. A committee, chaired by Richard C. Powell, M.D., professor of medicine, has selected the theme, "New Horizons in Primary Care Medicine." The CME program will begin at 9 a.m., Friday, May 20. There will be morning and afternoon CME sessions on Friday and a morning session on Saturday.

Additional information regarding the CME program may be obtained by calling (317) 274-8353. For more information on Medical Alumni Day activities, call the Alumni Office at (317) 274-8828.

Tranquilizer Found Useful in Treating Cancer Pain

The minor tranquilizer alprazolam (Xanax, Upjohn) has been found to have an unexpected pain-relief-enhancing effect in a particular group of cancer patients being treated for various psychiatric problems, according to "CNS NewsTips," an Upjohn Company newsletter.

The Upjohn Company cited a report appearing in the *Journal of Clinical Psychopharmacology*. According to the report, a study of 39 patients with several types of cancers (most with a particular type of pain characterized as sharp, intense and burning, such as that resulting from the feeling of a phantom breast or limb) showed a marked reduction of pain after being treated with alprazolam for an underlying mood or anxiety disorder.

None of the patients experienced any neurotoxicity as a result of combining alprazolam with their usual narcotic pain relievers. Only three patients developed minimal sedation. This was not considered bothersome, and it remitted within five days of the start of treatment.

'The Physician's Advisory' Offers Practical Advice

"The Physician's Advisory," published monthly by MCA Publications, continues to feature topics of special interest to physicians.

The January 1988 issue, for example, offers tax advice for 1988, a look at how to use a computer system to market your practice, and a perspective on the "senior partner syndrome." The December 1987 issue featured such headlines as, What Pay Raises Should You Give in Non-inflationary Times?, How to Provide Partial Retirement for Your Senior Members, Update on Fringe Benefits for New Doctors, and Select an Investment Counselor for Your Retirement Funds.

Single copies of "The Advisory" are \$15. The annual subscription fee is \$144. For information, write MCA Publications, P.O. Box 778, Plymouth Meeting, Pa. 19462.

Fitness Walking Clinic Scheduled in Evansville

A Fitness Walking-Race Walking Clinic will be held in Evansville Saturday, April 16.

The clinic will be conducted by Gary Westerfield, coach of the national women's race walking team and coordinator of both men's and women's national teams. Among the several sponsors are St. Mary's Medical Center and Welborn Memorial Hospital.

The clinic will include a video, "A Long Walk to the Olympics," and a demonstration of proper walking techniques. After a practice session, there will be a non-competitive one-mile Fun Walk and 5K Fitness and Race Walks.

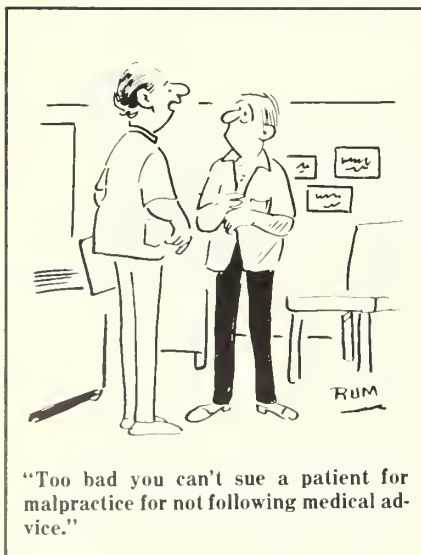
For information, call (812) 963-5884 or (812) 423-5866, or write to Walk for the Health of It, YMCA, P.O. Box 6106, Evansville, Ind. 47712. Include a self-addressed, stamped, legal-size return envelope.

Prostate Cancer A Review

(Following is a review of the National Institutes of Health consensus development conference statement on "The Management of Clinically Localized Prostate Cancer." The conference was conducted June 15-17, 1987. Copies are available from the Office of Medical Applications of Research, Bldg. 1, Rm. 216, Bethesda, Md. 20892.)

There have been few absolutes regarding the natural history, diagnosis, medical or surgical treatment of carcinoma of the prostate. This publication by the U.S. Government tackles these problems with felicity and collates recent developments. Fully 27 medical authorities were responsible for the creation of these 4½ pages of typescript. Curiously, only three are urologists. It gives a balanced appraisal, especially from the viewpoint of oncologists, radiologists and internists.

This is a concentrated summary, timely and well worth reading.—Rodney A. Mannion, M.D., LaPorte



Spider-Man Comic Book Assails Child Abuse

In a new, special edition of Spider-Man comic books, Spider-Man tells his young readers who have been hurt very badly by the words of adults they love, "You are not powerless. You can help yourself, and you can help others."

The comic book, written and drawn to teach methods of dealing with child abuse, is being distributed by the National Committee for Prevention of Child Abuse.

Another NCPA publication is the second edition of the 61-page pamphlet, "Child Abuse and the Law: A Legal Primer for Social Workers." It was written and revised by Barbara A. Caulfield and Robert M. Horowitz, both lawyers with extensive experience in the subject.

For ordering information on the comic book, contact Michele Oaks at NCPA, 332 S. Michigan Ave., Suite 950, Chicago 60604—(312) 663-3520.

To order the legal primer, send \$5 to NCPA, Publications Sales, P.O. Box 94283, Chicago 60690.

'White Coat' Hypertension Editorial

The Jan. 7 issue of *JAMA* contains an article on "white coat" hypertension. Twenty-one percent of patients with borderline high blood pressure may have the condition of slightly elevated BP because the doctor wears a white coat. Or, maybe the point was that, for certain patients, being examined by a doctor, no matter how dressed, always raises the pressure.

Indianapolis, years ago, enjoyed the practice of a highly competent, highly personable and handsome cardiologist, about whom it was said, "He always subtracts 15 points from the systolic to balance the result which was raised due to his personality." This may also illustrate the advantages of teaching a hypertensive patient to take and record his or her own blood pressure each day between visits to the doctor.

—FBR

Search Firm Reports Which Specialties Are in Demand, Which Are Not

Weatherby Health Care, a Connecticut executive firm, reports on medical specialties according to whether each of them is in oversupply or undersupply.

The most sought after by hospitals and HMOs are family practitioners, emergency medicine physicians, obstetrician/gynecologists and pediatricians. An oversupply of qualified specialists includes ophthalmologists, psychiatrists, pathologists and anesthesiologists.

The search firm predicts steady, if not growing, demand for ear/nose/throat specialists, internists and neurosurgeons.

Graduate Degree Program for Clinician-Executives Set to Begin July 31

The University of Wisconsin Medical School is using a \$763,253 grant from the W.K. Kellogg Foundation to develop an innovative, non-residential,

graduate-level program leading to a master of science degree in administrative medicine.

The intent is to improve health care delivery in communities by training physicians, nurses and other clinicians in administrative and leadership skills without taking them away from their current positions.

The program is being developed in collaboration with the American Academy of Medical Directors (AAMD). It is the only program in the country designed specifically for the clinician-executive who understands the need for formal management training but requires the convenience and flexibility of an off-campus degree program.

The 22-month, 30-credit program begins July 31. For information, write AAMD, 4830 W. Kennedy Blvd., Suite 648, Tampa, Fla. 33609.

Academy of Family Physicians Marks Its 40th Anniversary Editorial

The American Academy of Family Physicians is celebrating two important anniversaries. In June 1987 the Academy was 40 years old. Later in 1987, the 60,000th member was enrolled. These two events trigger the celebration but are not the only events to be honored.

The Academy, by dint of hard and enthusiastic work, has organized a process of elevating the specialty to a high plane. Family Practice is now a true specialty, as it should be. Medical students by the hundreds and thousands are attracted to it. Special clinical training is now available in many forms and in a host of locations. No one ever hears, as was once the case, "I'm just a general practitioner."

The specialty is actually basic to all other specialties. This is a celebration in which all physicians will join. Every medical practice in this country is better because of this famous academy.—FBR

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.



NEWS NOTES

Here and There...

Dr. Robert H. Rang of Washington, Ind., has been elected president of the Indiana Bone and Joint Club; he also is president of the Indiana Chapter, International College of Surgeons.

Dr. Thomas J. Conway, a Terre Haute pediatrician, has been selected by the Vigo County Health Board as county health officer; his term will expire in 1992.

Dr. Michael E. Harper of Tipton is the new chief of the medical staff, Tipton County Memorial Hospital.

Dr. Rafik S. Farag of Peru is the new president of the Dukes Memorial Hospital medical staff; Dr. Lloyd L. Hill is vice-president, and Dr. I.T. Yoon is secretary.

Dr. Herbert E. Ware of Muncie has been named Delaware County health officer, succeeding Dr. Clyde G. Botkin.

Dr. Deborah L. McCullough of Gary was among several guest speakers at a recent education seminar for Gary high school students sponsored by the Diamond Athletic Association of Northwest Indiana.

Dr. Nancy K. Madden of South Bend has been certified by the American Board of Obstetrics and Gynecology.

Dr. Philip R. Doering, a Bloomington radiologist, discussed diagnostic imaging procedures in January on a local TV news-talk show; later in the month, Dr. William E. Weber Jr., a Bloomington plastic surgeon, appeared on the show to address the question, "Is Plastic Surgery for You?"

Dr. Peter E. Gutierrez of Crown Point has been elected president of the executive board, Lake County Medical Center Development Agency in Gary.

Dr. Richard T. Senn, a Kokomo urologist, discussed the prevention of bladder infections during a January luncheon program sponsored by The Woman's Center, Howard Community Hospital.

Dr. Donald Kerner is the new president of the medical staff at St. Francis Hospital, Beech Grove; Dr. Stafford W. Pile is vice-president, and Dr. David J. Need is secretary-treasurer.

Dr. Steven R. Smith of Indianapolis has been inducted as a fellow of the American College of Preventive

Medicine; he is director of occupational health for Community Hospitals Indianapolis.

Dr. Gerry M. Hippensteel of Vincennes, director of the cancer program at Good Samaritan Hospital, discussed chemotherapy during a January meeting of "Families Facing Cancer."

Dr. Sheldon J. Friedman of Noblesville discussed the use of tissue plasminogen activator (TPA) in the treatment of myocardial infarctions during a January public program at Tipton County Memorial Hospital.

Dr. William R. Thompson of Winamac has received the Winamac Chamber of Commerce's annual Halleck Award for outstanding community service.

Dr. Stephen J. Wright of Lapel is the new president of the medical staff at Community Hospital of Anderson; Dr. William J. Tierney is chief of staff, Dr. Henry D. Covelli is vice-president, and Dr. Charles Howe is secretary-treasurer.

Dr. David L. Bixler discussed heart disease during a January Women and Health program at Community Hospital of Anderson.

Dr. Scott A. Shapiro of Indianapolis, assistant professor of neurosurgery at the I.U. School of Medicine, con-

tributed a chapter titled "The Laser in Vascular and Neural Welding" to a recently published book, *Laser Applications in Neurosurgery*.

Dr. Hans R. Wilbrandt, an Indianapolis ophthalmologist, was on the faculty of a Small Incision Phacoemulsification Course, conducted in Chicago recently; he lectured on endocapsular phacoemulsification techniques.

Dr. Frank Wu of Indianapolis recently passed the voluntary recertification for the American Board of Allergy and Immunology.

Dr. Stephen W. Perkins and Dr. Richard D. Zeph of Indianapolis will attend a Hair Replacement Surgery Course in Los Angeles this month; earlier this month, Dr. Perkins attended an Advanced Course in Head and Neck Reconstructive Surgery in Galveston, Tex.

Dr. John L. Beghin and Dr. John E. Garber of Indianapolis have been inducted as fellows of the American Academy of Orthopaedic Surgeons.

Dr. Maurice E. John Jr. of Jeffersonville, medical director of the John-Kenyon Eye Center, has been elected to a three-year term on the board of trustees of Drake University, Des Moines, Iowa.

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The Manager-Coach Syndrome

By Arthur R. Pell, Ph.D.
Consultant, Dale Carnegie & Associates, Inc.

When Bob Taylor joined the sales force of Associated Marketers, he had been selling for six years. He expected to be given a minimum of training in product knowledge and sent into the field. Instead, the manager, Ken Thompson, spend several weeks working with him to analyze his sales techniques and teaching him how to apply them to Associated's method of selling. It reminded him of his days as a college athlete. He had been a champion runner in high school but his coach at the university had given him as much attention and training as those team members who had never competed before. Successful managers keep this in mind when bringing on a new employee. Even if he or she has had previous experience, it is necessary to work on the company's approaches to the job, which may differ from the employee's past experience. Most managers will not hesitate to do this with a person who has had no previous experience, but often neglect it with experienced personnel.

Train! Train! Train!

Techniques of training can be learned by observing the athletic coach. The professional trainer, be he or she a coach or a manager, will start training with a thorough orientation on what must be acquired in the training. This can be done in group sessions (if more than one person is being trained) or by individual discussions. Training aids such as manuals, films or tapes are helpful at this time.

Elena Brown, Manager of Data Processing of Olympiad, Inc., has an enviable record of success in getting new people started rapidly. When a new employee joins her department, Elena works with that person almost exclusively for the first several days. She says, "The more time I spend up front, the better the success rate." During this initial training, Elena gives her people thorough review of the basics of the computers used in her department -- no matter how much experience the new employee has already had. She says this gets them started correctly and helps eliminate any bad habits carried over from previous jobs.

Both Ken and Elena believe in continuing training. They do not concentrate this training effort only on those people who are not performing satisfactorily, but make a practice of working with all of their people on a regular basis. Just as a coach of an athletic team is constantly on the alert to identify areas where improvement can be made for each team member, so successful supervisors seek to work with each of their people to hone their skills so they can become even more effective in their jobs.

Training does not end when the new employee is allowed to work independently. No matter how long a person is on the staff, continuing training and retraining should be part of the manager's job.

Just as the coach has periodic training sessions with each player, managers should have periodic individual training conferences with each of their people and group meetings for all the staff. The manager should always be on the alert for any variations in the performance of all subordinates and give them suggestions and coaching to improve.

Give Pep Talks

We often think of the coach giving a pep talk to the team before the game or during breaks. Managers also give pep talks to their people, but, more important, they train people to give pep talks to themselves. By showing subordinates that they are confident in their ability and in helping them build up their own confidence, managers are performing one of the most important functions of their job as manager-coach. But it cannot be assumed that a pep talk alone will do the job. Real inspiration comes from building each person's confidence and giving people the full support they deserve. Managers can accomplish this by knowing their people and understanding their individual differences. All people are not alike and one of the major errors in attempts to motivate people is to assume everybody wants the same from their jobs. For example, all people are not motivated by the opportunity to make money. True, money is a motivator to a degree but the degree varies from person to person. Some people seek status, others seek challenges and still others a kind word from the boss. Effective supervisors learn about each of their people. They find out what turns each of them on and what each really wants from the job. It may be necessary to tailor a special motivational program for each employee. More commonly, supervisors will find that each person is motivated by many different things. However, there are certain factors that can be build into most motivational systems.

Recognize Achievements

All human beings crave recognition. They want to be told how they are doing and given praise for work well done. Some managers give their time only to the persons who are not doing well. They will tell you, "If my people don't hear from me, they know they are doing OK." This is poor psychology. Everybody needs attention. Often, people who are ignored because they are doing well may slip in performance just to obtain the attention of their manager. Dale Carnegie said that a good leader praises every improvement. He advised, "Be hearty in your approbation and lavish in your praise." B.F. Skinner, the eminent psychologist, proved in his experiments, that by praising the good in people and ignoring the bad, the good is reinforced and the bad withers away. Recognize every improvement and good point. When special achievements are accomplished, the effective manager shows appreciation by praising the achievers in front of their peers. Another approach is to write letters of congratulations. The military use citations and medals; the athletes obtain titles and medals; the employee who is outstanding should receive plaques, certificates and other tangible acknowledgments of achievement in addition to financial reward.

Successful coaches work with people to keep up their spirits when they are depressed, to retrain them when they forget the fundamentals of the job, to glory with them about their triumphs, to understand their personalities, and model motivational programs to take advantage of these factors. Effective coaches do not give up easily when some people do not meet expectations. They work with their people and do their best to bring them up to the high standards set for the team.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530



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OBITUARIES

Wendell A. Weller, M.D.

Dr. Weller, 81, a retired Lafayette otolaryngologist, died Dec. 3, 1987.

He was a 1929 graduate of Ohio State University College of Medicine. He joined the U.S. Army Medical Corps after graduation and served until 1961, when he was retired with the rank of colonel.

Dr. Weller was associated with the Arnett Clinic in Lafayette from 1961 until he retired from practice in 1974. He was Board-certified and his memberships included the American Academy of Otolaryngology and the Association of Military Surgeons of the United States.

John T. Emhardt, M.D.

Dr. Emhardt, 82, a retired Indianapolis physician, died Dec. 25, 1987, at St. Francis Hospital Center.

He was a 1928 graduate of Indiana University School of Medicine. He retired in 1982.

Dr. Emhardt had been on the staffs of several hospitals, including St. Francis, which honored him in 1979 for his contributions toward its growth and quality of medical care; University Heights Hospital, where he was president of its medical staff in 1968; and Methodist Hospital of Indiana. He was a fellow of the American Academy of Family Physicians and was a member of the ISMA Fifty Year Club.

Jack G. Weinbaum, M.D.

Dr. Weinbaum, 65, a Terre Haute pathologist, died Jan. 4 in Mexico.

He was a 1946 graduate of the State University of New York Downstate Medical Center.

Dr. Weinbaum, a former ISMA delegate for the Vigo County Medical Society, was Board-certified in pathology and nuclear medicine. Besides serving on the staff of several hospitals, he was a professor of pathology at the Indiana University School of Medicine. His professional affiliations included the International Academy of Pathology, the College of American Pathologists, and the American Society of Clinical Pathologists.

Earl K. Williams, M.D.

Dr. Williams, 66, a retired Logansport radiologist, died Sept. 25, 1987.

He was a 1953 graduate of the University of Louisville School of Medicine and was a Navy veteran of World War II.

Dr. Williams was a former secretary of the Clinton County Medical Society. He was Board-certified in radiology and nuclear medicine and was a fellow of the American College of Radiology. He was also a member of the Radiological Society of North America and the Society of Nuclear Medicine.

Harley P. Palmer, M.D.

Dr. Palmer, 56, director of pathology at Morgan County Memorial Hospital, Martinsville, died Dec. 14, 1987.

He was a 1956 graduate of Indiana University School of Medicine.

Dr. Palmer was a former president of the Indiana Association of Pathologists. He was a diplomate of the American Board of Pathology and was a member of the American Society of Clinical Pathologists, College of American Pathologists, and the American College of Physicians.

Vernon K. Pancost, M.D.

Dr. Pancost, 78, a retired Elkhart physician, died Jan. 2 at Elkhart General Hospital.

He was a 1934 graduate of Indiana University School of Medicine and served as a flight surgeon during World War II.

Dr. Pancost, who retired in 1984, was a former president of the Elkhart County Medical Society and was a charter member of the Health Advisory Council for Elkhart Community Schools. He was a member of the American Academy of Family Physicians and the ISMA Fifty Year Club.

Ray H. Burnikel, M.D.

Dr. Burnikel, 72, a retired Evansville physician, died Jan. 1 at his home.

He was a 1940 graduate of Indiana University School of Medicine and served as a flight surgeon during World War II. He retired from practice in 1982.

Dr. Burnikel was a former ISMA delegate representing the Vanderburgh County Medical Society. He was a former county society president and a former president of the medical staffs at both Deaconess Hospital and St. Mary's Medical Center. He was a diplomate of the American Board of Colon and Rectal Surgery and was a member of the American College of Surgeons and the American Society of Colon and Rectal Surgeons.

Memorials: Indiana Medical Foundation

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George A. McDowell, M.D.

Dr. McDowell, 82, a retired Fort Wayne physician, died Dec. 9, 1987, at Lutheran Hospital.

He was a 1930 graduate of Indiana University School of Medicine and an Army veteran of World War II.

Dr. McDowell, who retired in 1985, was a past president and treasurer of the Allen County Medical Society. He served as county health commissioner during the early 1970s. He was a past president of the Fort Wayne Academy of Medicine and of Lutheran Hospital, and a former medical director of Midwestern United Life Insurance Co. He was a member of the American Academy of Family Physicians and the ISMA Fifty Year Club.

John W. Hilbert, M.D.

Dr. Hilbert, 95, a retired South Bend physician, died Dec. 13, 1987. He had been living in Evergreen Park, Ill.

He was a 1919 graduate of the University of Illinois College of Medicine.

Dr. Hilbert, who retired in 1953, had been chief physician for the former Studebaker Corp. He was a former chief of staff of Memorial Hospital (then Epworth Hospital), South Bend. He was a member of the Industrial Medical Association and the ISMA Fifty Year Club.

Forrest L. Denny, M.D.

Dr. Denny, 68, a retired Indianapolis physician, died Jan. 10.

He was a 1942 graduate of Indiana University School of Medicine and served with the Army during World War II.

Dr. Denny, who retired in 1986, was a member of the American Academy of Family Physicians.

George L. Derhammer, M.D.

Dr. Derhammer, 84, a retired Brookston general practitioner, died Dec. 4, 1987, at his home in Monticello.

He was a 1930 graduate of Indiana University School of Medicine and was an Army veteran of World War II.

Dr. Derhammer, who retired from practice in 1972, was a former director of Farmer's State Bank. He was a member of the ISMA Fifty Year Club.

William R. Maurer, M.D.

Dr. Maurer, 66, an East Chicago surgeon, died Jan. 13.

He was a 1945 graduate of Cornell University Medical College.

Dr. Maurer, a member of the medical staff at St. Catherine Hospital, was a diplomate of the American Board of Surgery and the American Board of Thoracic Surgery. He was a fellow of the American College of Surgeons.

Carroll O'Rourke, M.D.

Dr. O'Rourke, 87, a retired Fort Wayne physician, died Jan. 9.

He was a 1925 graduate of Indiana University School of Medicine and was a Navy veteran of World War II.

Dr. O'Rourke was certified by the American Board of Otolaryngology. His memberships included the American Academy of Ophthalmology and the American College of Surgeons, as well as the ISMA Fifty Year Club.

Alexander Y. Pipo, M.D.

Dr. Pipo, 40, an anesthesiologist at Methodist Hospital, Gary, died Dec. 1, 1987.

He received the M.D. degree in 1971 from the University of St. Tomas, Manila.

Dr. Pipo completed his residency in 1975 at the Indiana University Medical Center. He was a diplomate of the American Board of Anesthesiology.

Kathryn A. Jackson, M.D.

Dr. Jackson, 61, formerly associated with Witham Memorial Hospital, Lebanon, died Jan. 5.

She was a 1964 graduate of Indiana University School of Medicine.

Dr. Jackson was a former president and secretary-treasurer of the Boone County Medical Society.

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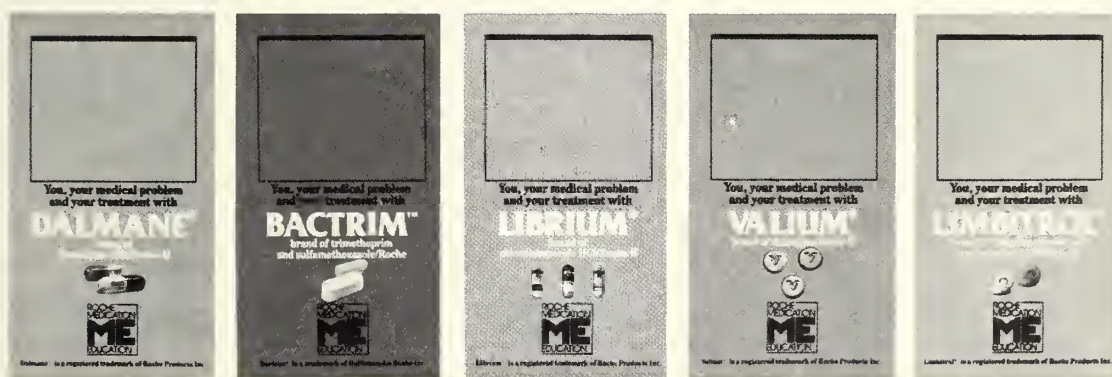


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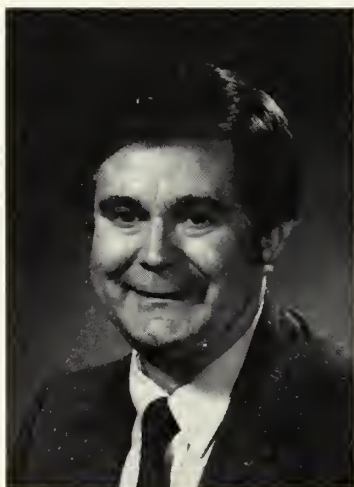


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The Journal of the Indiana State Medical Association



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USPS 284-440
ISSN 0746-8288

POSTMASTER: Send address changes to
Indiana State Medical Association, c/o
Membership Department, 3935 N. Meri-
dian St., Indianapolis, Ind. 46208.

INDIANA MEDICINE is published
monthly by the Indiana State Medical
Association. Second-class postage paid
at Indianapolis, Ind.

Address correspondence relating to
editorial material, advertising or
subscriptions to: INDIANA MEDICINE,
3935 N. Meridian St., Indianapolis, Ind.
46208. Phone (317) 925-7545.

Annual subscription rates: \$20
domestic, \$22 Canada, \$23 foreign.
Medical library rates: \$18 domestic, \$20
Canada, \$21 foreign. Full-time Indiana
medical students—\$10. Single copies not
available. Subscriptions are renewable
annually.



ABOUT THE COVER

William Henry Wishard, M.D., for whom Wishard Memorial
Hospital at the I.U. Medical Center is named, was a man
with a sharp memory. This month's Medical Museum Notes
recounts a Civil War tale that involved Dr. Wishard, In-
diana Governor Oliver P. Morton, President Abraham Lin-
coln and the Indiana veterans who fought that war.—
(PORTRAIT BY T.C. STEELE)

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for exclusive publication, subject to
editorial requirements. Publication dead-
line: 1st day of month preceding month
of issue. Instructions for authors avail-
able upon request.

All issues since 1967 are available on
microfilm from University Microfilms In-
ternational, 300 N. Zeeb Rd., Ann Ar-
bor, Mich. 48106. Indexed in Index
Medicus and Hospital Literature Index.

Advertising rates and data available
upon request.

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STETHOSCOPE

EXAMINING STATE & NATIONAL MEDICAL ISSUES

State laws restricting the corporate practice of optometry must be repealed, according to a new FTC ruling. The order will affect laws limiting the number of branch offices that may be owned or operated by optometrists, placing prohibitions on optometrists' use of trade names, and placing prohibitions on employer-employee or other optometrist affiliations with individuals who are not optometrists.

The Health Care Financing Administration is trying to correct problems stemming from premature carrier claims denials and improper issuance of refund notices under new "medically unnecessary" provisions. HCFA has issued new instructions for Medicare carriers, requiring them to contact physicians and ask for additional information before denying any claim and triggering a refund notice to the patient and physician. In the meantime, physicians who receive refund notices should promptly file an appeal of any "medically unnecessary" denial and the refund requirement. The appeal should contain thorough documentation of the necessity of the service in question.

IN INDIANA...

The ISMA Department of Government Relations reports several successes in the short session of the Indiana General Assembly.

Legislation restricting the ability of the physician to dispense medications from the office did not receive a committee hearing. The issue, however, is expected to be revived next year.

Another bill that did not receive a hearing would have required as a condition of licensure that a physician agree to accept the federal assignment rate for Medicare claims.

Two attempts to alter the medical review panel process in favor of the plaintiff failed. One proposal of HEA 1070 would have allowed a case to proceed directly to court if the defendant failed to comply with a discovery order issued by the panel chairman. Another amendment would have allowed the plaintiff to bypass the medical review panel process if the claim was filed two years from the date of discovery and if the plaintiff could prove that the defendant tried to conceal information or acted with malice.

Promotional distribution of tobacco to minors is prohibited as a result of the passage of SEA 235, an ISMA-initiated bill. The bill also makes it a Class C infraction for a minor to purchase tobacco.

The comprehensive AIDS bill:

1. Extends the current reporting requirements of confirmed cases of AIDS to include HIV positive test results.
2. Establishes an advisory committee to work with the State Board of Health to develop rules governing the proper transport and treatment of infectious wastes.
3. Establishes a procedure to notify emergency medical care providers if that provider has been exposed to blood and if the exposure would result in the transmission of a dangerous communicable disease.
4. Requires employers to provide training and equipment for use of universal precautions for those workers who come in contact with body fluids.
5. Requires the State Board of Health to provide information to physicians and dentists on AIDS and related diseases.

Two proposals not included in the bill would have required mandatory continuing education on AIDS for physicians and dentists and HIV testing for marriage applicants.

More low-income women--those whose income levels are at 50% of the poverty level-- will be eligible for Medicaid coverage of pre-natal care programs, delivery and medical care of the child up to age one under SEA 202.

Good faith peer review activities of PPOs and HMOs are included in expanded confidentiality protections under Indiana's peer review statute in HEA 1196.

SEA 139, which would have delayed for one year--until July 1989--the implementation of the recommendations of the governor's Prescription Abuse Study Committee, was approved by the legislators but vetoed by the governor.

SEA 415 makes it a felony for a physician to prescribe anabolic steroids for athletic performance. The law also establishes a felony penalty for persons who distribute anabolic steroids for athletic performance.

Physicians and other health care providers must keep their health records for a minimum of seven years as the result of HEA 1055. X-rays and mammograms must be kept for five years. Physicians also are required to inform their patients about the length of time they are required to keep x-rays and mammograms.

The ISMA's Department of Government Relations will summarize these laws in a publication called "1988 Digest of Health and Medical Laws," which will be mailed this month.

Amphetamine use for weight reduction or obesity treatment would be restricted under a proposed rule of the Medical Licensing Board of Indiana. Physicians could not use, prescribe, order, dispense, administer, supply, sell or give any amphetamine, sympathomimetic amine drug or compound designated as a Schedule II controlled substance for control of weight reduction. Restrictions on the prescribing of Schedule III and IV controlled substances for weight loss also are proposed. Results of a public hearing on the rules will be published next month in Stethoscope.

MEDICAL MUSEUM NOTES



CHARLES A. BONSETT, M.D., Indianapolis

WILLIAM HENRY WISHARD, M.D. (1816-1913) has been featured on this page before and also on the front cover (but never before in four-color). He was a founding member of the Indiana State Medical Society in 1849 and was the last survivor of the original 49 members. He was president of the Society (Association since 1904) in 1889.

Dr. Wishard has left a trail of recorded memories, many being found in

At 92, Dr. Wishard Had a Sharp Memory. Able to Give Names and Dates Without Hesitation . . .

newspapers on the occasion of a birthday or other event. The following is abstracted from the *Indianapolis Star*, Jan. 17, 1906, page 10, the occasion being the doctor's 92nd birthday. He was described as having a sharp memory, being able to give names and dates without hesitation. The doctor's specific topic of conversation was Indiana's Civil War governor, Oliver P. Morton.

"I did not enlist in the Army when the war broke out . . . I was 45 years old . . . Governor Morton offered me a commission but I would not accept it. He was anxious to get information concerning the sick soldiers from Indiana that he might care for them, and I consented to go to the front for him.

"When I went to the hospitals about Vicksburg and asked the condition of Indiana soldiers, some of the boys arose from their cots and said: 'It beats thunder how they are looking after Indiana men! The Governor must be dead!'

"Quartermaster General Stone of Indiana had a boatload of medical sup-

plies for distribution about Vicksburg. He wanted to be introduced to the surgeon general but I refused. The surgeon was an insolent fellow . . . (When I told him of our errand, he said: 'Give my compliments to Governor Morton and inform him kindly that we have facilities for the care and transportation of the sick without his assistance!'

"Well, we were not to be discouraged by that. I had visited all the hospitals about Vicksburg and suggested a scheme. While the quartermaster went to the surgeons and told them he had some goods to distribute, I questioned the clerks and got the number of men, the capacity of the hospitals and other facts.

"We hailed hospital boats and found their facilities for transportation, (etc.). All these statistics I gave to Governor Morton and he went to Washington with the plea that wounded and sick soldiers should not be permitted to lie in their camps and perish, but should be sent North for care in their homes and hospitals."

Secretary of War Stanton would not hear of the governor's plan.

"... With that (the governor) went to President Lincoln who called in four members of his Cabinet and asked Stanton to produce the surgeon general's records. Stanton made a speech against Morton's proposition . . . and Morton made a speech in reply, saying: 'This thing ought to be done. It's an outrage to have our citizens to lie there and die when they could be cared for at home.'

"How are you going to do it?" asked Stanton. 'Give Morton the right to remove Indiana soldiers and leave the others down there?'

"Abraham Lincoln sat with his legs crossed for a moment and then said: 'Issue general orders and communicate with all governors to assist in the movement.'

"Morton immediately telegraphed for a boat to be chartered and ordered

to Evansville to be made ready for the trip South. It was the Sunnyside and I was placed in command . . . We ploughed the river . . . to Memphis day and night.

"You can't imagine the joy of the sick soldiers when I told them they were going to be brought back home. They cried and laughed and shouted and prayed all at once . . .

"... The boat grounded at Cairo on our return and I chartered a train. We (missed our connection at Mattoon, Illinois.) The train that we wanted had just left. There was a saloon across the street. Some of the boys who could get out went over there for a nip and a little tobacco and were shortchanged. When I found out . . . I went to the town marshal and asked him what would happen if we made the proprietors settle and deal fairly. He said it was a bad place, run by thieves, and that he would leave town for the day.

"With us were about a dozen men on parole who were strong as wolves.

"You Can't Imagine the Joy of the Sick Soldiers When I Told Them They Were Going Back Home . . ."

I had them all line up and march to the saloon together with the sick men who were able to walk. I asked for justice . . . and made the proprietors hand back the change with the alternative of having the place gutted. The change was forthcoming."

"(On reaching Indiana, some of the sick soldiers) went into the Soldiers House (now Wishard Hospital) and others returned to their families. It was a time of great rejoicing . . . Governor Morton was a great man (who) loved humanity."

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HARD Manufacturing Company announces availability of the Riley™ Access, a device originally developed by the Riley Children's Hospital. It allows a special vertical bar in the long side of the crib to be temporarily mobilized to allow passage of tubes and other devices into the crib without disconnecting the suction or fluid flow. The special bar returns to a solid anchor, leaving all the inter-bar measurements at 2¼ inches, the standard safety interval. HARD is active in safety and convenience improvements in cribs, such as Crib Eye Cover, plexiglass ends, storage shelves and bumper pads.

Colwell Systems is introducing new Insurance File Records which enable the office to keep all necessary patient insurance data in the patient's file and up to date constantly. Colwell also has a free Accu-Log Pegboard Bookkeeping Information Kit. This is a no-carbon "one-write" Accu-Log system that can reduce paperwork and increase cash flow and security.

Burroughs Wellcome announces that Digibind®, which has been on limited sale since 1986, can now be obtained in a larger group of hospitals. Digibind is Digoxin Immune Fab (Ovine) and is useful in treatment of digitalis intoxication. It will rapidly reverse various potentially life-threatening cases of digitalis intoxication, including those arising from massive overdoses.

Beecham Laboratories reports that infections due to *Brahnamella catarrhalis* are becoming more frequent and widespread. Many of the newer infections are resistant to penicillin, amoxicillin and ampicillin. Beecham recommends Augmentin® (amoxicillin/clavulanate potassium), which contains beta-lactamase inhibitor clavulanate. The recent cases include many elderly patients with chronic diseases such as diabetes, chronic obstructive lung disease, alcoholism and steroid dependence. The bacterium is also being found on pediatric wards, sometimes on a nosocomial basis.



Pacific Biosystems announce Stat Scrub®, a new device consisting of a see-through cabinet-like machine into which the user inserts his hands and forearms. Oscillating jets of water, anti-bacterial chemicals and air deliver a 90-second "scrub" that effectively reduces bacterial counts without the traditional hand and brush cleansing procedures that can last up to 10 minutes. There is, also, a smaller model suitable for doctors' offices, restaurants and food-handling firms. Hospital tests have shown the Stat Scrub to be 65% more effective in eliminating dangerous bacteria from the hands and forearms of surgeons and other personnel.

Upjohn announces a new dosage form for Cytosar-U Sterile Powder. It is now available by prescription in 1- and 2-gram vials. With the announcement comes a reminder that the drug is a potent bone marrow suppressant and should not be used except by physicians experienced in cancer chemotherapy.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by **INDIANA MEDICINE** or by the Indiana State Medical Association.

The PDR has released its 1988 *Index of Drug Interactions and Side Effects*. All the possible dangers and side effects have always been covered in the standard PDR under "Warnings," "Precautions" and "Adverse Reactions." Now it is listed in a special publication, arranged and indexed to display vital information for easy access.

Midmark Corporation is now producing the Ritter M-7 SpeedClave®. The U.L. Listed M-7 Speedclave is an economical, self-contained steam sterilizer for physician's, dentist's and podiatrist's offices plus clinics, hospitals, nursing homes and labs. It sterilizes instruments, linen packs and glassware quickly and economically.

Hoffmann-LaRoche announces a new brain-imaging product that is produced by Medi-Physica, a Roche subsidiary. SPECTamine® (Iofetamine HCL I 123 injection) produces high quality brain images from which disturbances of physiology and function can be determined. CT scans and magnetic resonance imaging will reveal structural damage but SPECTamine will show functional change even before actual strokes and in any case while the CT scan and MRI are normal. Positron emission tomography (PET) will reveal functional defects but, due to the high cost of its special equipment, is now thought to be secondary to SPECTamine which may be used in any facility with nuclear medicine departments. The product has been available in Japan and Europe for several years.

Premiere Biomedical has a new four-page brochure on the Anthron® Anti-thrombogenic Catheter. The catheter is able to address the complications caused by thrombus formation. The catheter's hydrophilic polymer material is impregnated with heparin and bonded to the surface of braided polyurethane to form an antithrombogenic substance. The hydrophilic properties make for a very slippery surface for easier insertion and smoother advancement.



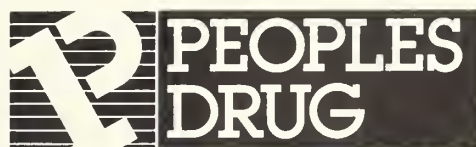
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FUTURE FILE

Indiana University CME

May 4-6: Musculoskeletal Imaging 1988, Lincoln Hotel, Indianapolis.

May 10-12: Family Practice Update: Part I, Lincoln Hotel, Indianapolis.

May 13-14: Phaco Emulsification, Lincoln Hotel, Indianapolis.

May 20-21: New Horizons in Primary Care Medicine, Lincoln Hotel, Indianapolis.

May 24-27: International Clinical Hyperthermia Symposium, Lincoln Hotel, Indianapolis.

For more information on these and other CME courses, call Melody Dian, CME assistant director, (317) 274-8353.

Ventilator Patients

The Indiana Thoracic Society will sponsor a conference on "Care of the Chronic Ventilator Patient" May 19 at the Radisson Plaza Hotel in Indianapolis.

Speakers will include national and state experts in patient care and policy development. They will cover topics such as insurance coverage for chronic ventilator patients, cost and quality of care in different settings, and patient care in hospitals and extended care facilities.

For more information, call the Indiana Thoracic Society, 8777 Purdue Road, Suite 310, Indianapolis 46268—(317) 872-9685.



"It's simple, you give us all your money; if we can't use it all, we give you some of it back."

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Magnetic Resonance

The 7th Annual Meeting of the Society of Magnetic Resonance in Medicine will be held Aug. 20 to 26, at the Hilton Hotel and Towers in San Francisco.

For details and registration information, write to the Society at 15 Shattuck Square, Suite 204, Berkeley, Calif. 94704—(415) 841-1899.

University of Kentucky

The University of Kentucky College of Medicine has announced several continuing education programs.

"Therapeutic Advances in Acute Myocardial Infarction" is the subject of a course to be offered April 22 and 23.

"Contemporary Pediatrics for the Practicing Physician" will be the topic of the program April 29 and 30.

"Nineteenth Family Medicine Review—Session II" is the focus of the May 22 to 27 program.

All courses will be held at the Hyatt Regency Hotel in Lexington.

For more information, call Joy Greene, Continuing Medical Education, 132 College of Medicine Office Building, University of Kentucky, Lexington, Ky. 40536—(606) 233-5161.

Immune Deficiency

"Immune Deficiency and Vaccines" is the title of a CME course to be held at The Wisconsin Center in Madison, Sept. 22 to 24. Credit is approximately 17 hours of AMA Category 1.

The correspondent is Cathy Means, 2715 Marshall Court, Madison, Wisc. 53704—(608) 263-6637.

Child Care

The 23rd Annual Indiana Multidisciplinary Child Care Conference will be held May 18-19 at Union Station Holiday Inn in downtown Indianapolis.

Subjects to be discussed will include management of asthma, office laboratory testing, sports medicine, office allergy and immunology, pediatric infectious disease, and nutrition, fluid and electrolytes.

For more information contact: Dr. Richard Schreiner, Indiana University School of Medicine, Riley Hospital for Children, One Children's Square, Indianapolis 46223.

Methodist Hospital CME

May 5, 6 & 7: 14th Annual Wishard Lecture, Indiana University and Methodist Hospital.

May 19 and 20: 23rd Annual Batman Lecture Series, Methodist Hospital Auditorium.

May 20: Laser Lithotripsy, Stone Management Workshop, Methodist Hospital Wile Hall #320.

June 10 and 11: Ohio Valley Lake Erie Association of Cancer Centers Annual Meeting, Methodist Hospital Auditorium.

For more information, contact Dixie K. Estridge, Coordinator, Continuing Medical Education, Methodist Hospital, (317) 929-3733.

AIDS Update

"AIDS and Infectious Disease Update" is the title of a CME course to be held June 16 to 18 at Hilton Resort, South Padre Island, Tex. Participants will receive 16 CME credit hours.

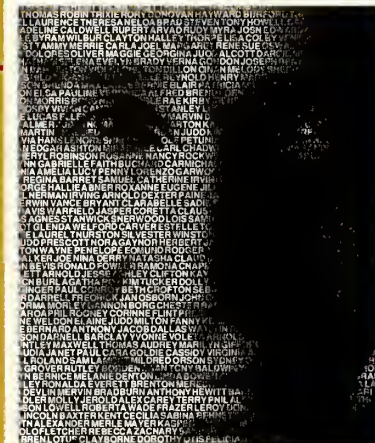
The course is sponsored by Scott and White Memorial Hospital and Clinic and the Texas A&M University College of Medicine.

To register or obtain more information, contact the Scott and White Office of Continuing Medical Education, 2401 South 31st St., Temple, Tex. 76508—(817) 774-2350.

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...like the more than one million patients who have received **INDERAL® LA**.

In a recent survey, 4,120 participating physicians gave us their views¹ on **INDERAL LA** in the treatment of hypertension, angina and migraine.

INDERAL LA is their preferred beta blocker

...of the nearly three out of four physicians responding to the questionnaire, an impressive 97% rated **INDERAL LA** good to excellent for overall performance. Virtually all cited efficacy, tolerability, long-term cardiovascular protection and once-daily convenience as important factors in their choosing to prescribe **INDERAL LA**.

INDERAL LA promotes patient compliance

...Virtually every responding physician rated patient satisfaction with **INDERAL LA** to be as good as, or better than, other beta blockers.

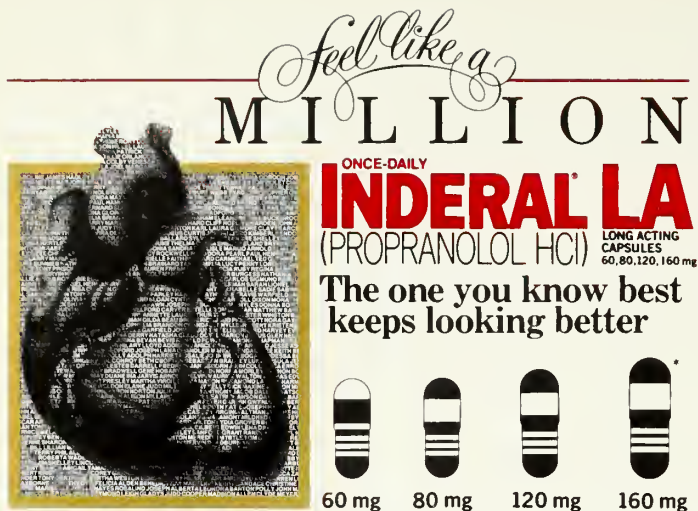
Like conventional **INDERAL** Tablets, **INDERAL LA** should not be used in the presence of congestive heart failure, sinus bradycardia, cardiogenic shock, heart block greater than first degree and bronchial asthma.

ONCE-DAILY
INDERAL® LA
 (PROPRANOLOL HCl)
 LONG ACTING CAPSULES
 60, 80, 120, 160 mg

The one you know best keeps looking better

Please see next page for brief summary of prescribing information.

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BRIEF SUMMARY (FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)

INDERAL[®] LA brand of propranolol hydrochloride (Long Acting Capsules)

DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 60 mg, 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. Inderal is a nonselective, beta-adrenergic receptor-blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor-stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by Inderal, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

Inderal LA Capsules (60, 80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with Inderal LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of Inderal Tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

Inderal LA should not be considered a simple mg-for-mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to Inderal LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, Inderal LA has been therapeutically equivalent to the same mg dose of conventional Inderal as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure, and rate pressure product. Inderal LA can provide effective beta blockade for a 24-hour period.

INDICATIONS AND USAGE. **Hypertension:** Inderal LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. Inderal LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: Inderal LA is indicated for the long-term management of patients with angina pectoris.

Migraine: Inderal LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: Inderal LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. Inderal LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. Inderal is contraindicated in 1) cardiogenic shock; 2) sinus bradycardia and greater than first-degree block; 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with Inderal.

WARNINGS. **CARDIAC FAILURE:** Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or Inderal should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of Inderal therapy. Therefore, when discontinuance of Inderal is planned, the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If Inderal therapy is interrupted and exacerbation of angina occurs, it is usually advisable to reinstitute Inderal therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. Inderal should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Inderal (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, eg, dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta blockers should be used with caution in diabetic patients if a beta-blocking agent is required. Beta blockers may mask tachycardia occurring with hypoglycemia, but other manifestations such as dizziness and sweating may not be significantly affected. Following insulin-induced hypoglycemia, propranolol may cause a delay in the recovery of blood glucose to normal levels.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol may change thyroid function tests, increasing T_4 and reverse T_3 , and decreasing T_3 .

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. GENERAL: Propranolol should be used with caution in patients with impaired hepatic or renal function. Inderal (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that Inderal may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if Inderal (propranolol HCl) is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Caution should be exercised when patients receiving a beta blocker are administered a calcium-channel-blocking drug, especially intravenous verapamil, for both agents may depress myocardial contractility or atrioventricular conduction. On rare occasions, the concomitant intravenous use of a beta blocker and verapamil has resulted in serious adverse reactions, especially in patients with severe cardiomyopathy, congestive heart failure, or recent myocardial infarction.

Aluminum hydroxide gel greatly reduces intestinal absorption of propranolol.

Ethanol slows the rate of absorption of propranolol.

Phenytoin, phenobarbital, and rifampin accelerate propranolol clearance.

Chlorpromazine, when used concomitantly with propranolol, results in increased plasma levels of both drugs.

Antipyrine and lidocaine have reduced clearance when used concomitantly with propranolol.

Thyroxine may result in a lower than expected T_3 concentration when used concomitantly with propranolol.

Cimetidine decreases the hepatic metabolism of propranolol, delaying elimination and increasing blood levels.

Theophylline clearance is reduced when used concomitantly with propranolol.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY: Pregnancy Category C. Inderal has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. Inderal should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS: Inderal is excreted in human milk. Caution should be exercised when Inderal is administered to a nursing woman.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Light-headedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to cataplexy; visual disturbances; hallucinations; vivid dreams; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics. For immediate formulations, fatigue, lethargy, and vivid dreams appear dose related.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasisiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. Inderal LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from Inderal Tablets to Inderal LA Capsules, care should be taken to assure that the desired therapeutic effect is maintained. Inderal LA should not be considered a simple mg-for-mg substitute for Inderal. Inderal LA has different kinetics and produces lower blood levels. Retitration may be necessary, especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—Dosage must be individualized. The usual initial dosage is 80 mg Inderal LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—Dosage must be individualized. Starting with 80 mg Inderal LA once daily, dosage should be gradually increased at three- to seven-day intervals until optimal response is obtained. Although individual patients may respond at any dosage level, the average optimal dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—Dosage must be individualized. The initial oral dose is 80 mg Inderal LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimal migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximal dose, Inderal LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg Inderal LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

*The appearance of these capsules is a registered trademark of Ayerst Laboratories.

Reference:

1. Data on file, Ayerst Laboratories.

D7295/188

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To obtain Category 1 credit for this month's article, complete the quiz on page 353.



Vision Screening for Motor Vehicle Operators

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GOOD VISION IS essential for the safe operation of a motor vehicle. Naturally, driving privileges should be related to functional ability, and driver licensing standards should reflect this.¹ Licensing of drivers is required, in part, to help protect the public against those whose impaired vision is likely to lead to accidents. Therefore, it is important that vision screening methods indicate true visual capabilities.

In this study we were concerned with central visual acuity screening methods. Although central visual acuity minimums have been established in each state for automobile driver licensure,² the screening technique for obtaining such acuities has not been standardized nationwide. Upgrading standards for licensing drivers is an important issue because inadequate vision screening could contribute to the annual national toll of highway accidents.³

Certain borderline applicants may

have their driving status altered based on the type of visual acuity test done. Our purpose was to determine whether the Keystone telebinocular screener, currently used for vision screening in license branches in Indiana, is as accurate as the conventional means of assessing visual acuity with the distance Snellen eye chart.

Subjects and Methods

This study was conducted at a license branch in Indianapolis with the approval of the commissioner of the Indiana Bureau of Motor Vehicles. The license branch agreed to our testing visual acuities in the usual designated area during regular hours. Thus, actual testing conditions were met for drivers obtaining their licenses. Applicants undergoing visual acuity testing were of legal driving age, wearing refractive correction if needed, and able to cooperate for testing.

The examination included visual acuity testing for distance using the

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Keystone telebinocular screener and the distance Snellen eye chart. The telebinocular screener was the instrument used routinely by the branch. The distance Snellen acuity equipment was supplied by the investigators. The telebinocular screener was illuminated to its standard level. Each applicant stood in front of the viewing ports and read a standard set of letters calibrated with a near point of 16 inches and a far distance of 20 feet.⁴ Each eye was tested separately. A standard Snellen acuity chart calibrated for a testing distance of 10 feet and illuminated to normal room lighting was used to test distance visual acuity. Again, each eye was tested separately.

Applicants were tested with their distance-correcting glasses or with contact lenses. They all were tested using both techniques, but the order of testing was alternated. Five applicants at a time were tested with the machine first, and the next five with the distance Snellen eye chart first. The subjectively preferred testing method was determined by asking the participants which test they preferred, or if they had no preference. Statistical analysis of data was performed to determine significance of differences in acuities obtained with the two testing methods. The data were organized into three groups for analysis: Two separated subjects by order of testing; one recorded the group as a whole. These data were then further analyzed by age, sex, type of correction and method preference.

Results

The study included 179 subjects, 91 tested with the eye chart first and 88 with the telebinocular screener first. When divided by sex, age and type of correction, each group was proportionately distributed by testing order (Table 1). The female to male ratio was 3:2. There were 55% between 15-39, 34% between 40-65, and 11% between 66-78 years of age. During testing, 46% of the participants wore glasses, 15% wore contacts, and 39% had no correc-

TABLE 1
Distribution of Subjects

CATEGORY	SNELLEN FIRST		TELE- BINOCULAR FIRST		TOTAL (N = 179)	
	#	%	#	%	#	%
SEX						
FEMALE	56	61.5	48	54.5	104	58.1
MALE	35	38.4	40	45.4	75	41.9
AGE						
15-39	51	56.0	48	54.5	99	55.3
40-65	33	36.3	28	31.8	61	34.1
66-78	7	7.7	12	13.6	19	10.6
CORRECTION*						
GLASSES	40	45.5	40	47.1	80	46.2
CONTACTS	15	17.0	11	12.9	26	15.0
NONE	33	37.5	34	40.0	67	38.7

*Six subjects were not documented as to whether they were wearing glasses or contacts and thus are not included here.

TABLE 2
Screening Method Preference

PREFERENCE	SNELLEN FIRST		TELE- BINOCULAR FIRST		TOTAL (N = 179)	
	#	%	#	%	#	%
CHART	29	31.9	30	34.1	59	33.0
MACHINE	28	30.8	30	34.1	58	32.4
NO PREFERENCE	34	37.4	28	31.8	62	34.6

TABLE 3
Screening Method Acuity and Restrictions

	SNELLEN FIRST		TELE- BINOCULAR FIRST		TOTAL	
	#	%	#	%	#	%
ACUITY					(N = 179)	
CHART	13	7.3	27	15.1	40	22.3
BETTER						
MACHINE	5	2.8	4	2.2	9	5.0
BETTER						
RESTRICTIONS					(N = 24)	
CHART	2	8.3	1	4.2	3	12.5
MACHINE	3	12.5	8	33.3	11	45.8
BOTH	5	20.8	5	20.8	10	41.6

tion (Table 1). The preference for the method of acuity screening was equally divided: 33.0% preferred the chart, 32.4% preferred the machine, and 34.6% had no preference (Table 2).

Overall, participants performed better with the distance Snellen eye chart regardless of testing order. Forty-nine subjects (27.4%) had different acuities when the testing methods were compared. Forty had better acuity with the chart (22.3%), and nine had better vision with the machine (5.0%) (Table 3). This is a statistically significant difference ($p < 0.5$). Testing of this population resulted in 24 (13.4%) having some form of driving restriction. Of these, machine testing resulted in 1.6 times more restrictions than eye chart testing (Table 3), which again is statistically significant. Moreover, the number of restrictions resulting from being tested first with either device was not significant statistically.

Discussion

Because the actual issuing, restricting and withdrawing of driver licenses is the function of the licensing authority and not the physician,⁵ it is of utmost importance that optimal vision screening methods are used. The method used should accurately assess visual acuity and be sufficiently sensitive to identify need for restrictions. However, the method should not have intrinsic characteristics that result in needless restrictions.

The Keystone telebinocular screener is used for distance visual acuity screening in many license branches. The advantage of this screening device is that it requires less space for testing by allowing "table-top" compactness. This is achieved through optical simulation of distance. However, a nearness illusion occurs when apposing the face with the eye ports. This could produce excess stimulation of convergence and accommodation, even though optics simulate a distant target. The device also is subject to variations of the effective level of illumination from

INDIANA DRIVERS VISION TEST CHART

1. Do you wear glasses or contact lenses? *

2. Read Block A, Line 6, Block B, Line 6; and Block C, Line 6.

(If Examinee falters on Line 6, move on to Line 5 or 4 until Examinee can give 4 of 5 or 2 of 3 correct responses.)

TEST NO. 1-74 (LITERATE)

Line No.	VISUAL ACUITY	BLOCK A (Both Eyes)	BLOCK B (Right Eye)	BLOCK C (Left Eye)
1	20/200	L	E	P
2	20/100	T P L	F C T	L O Z
3	20/70	E L C Z O	P L O Z E	F C T P L
4	20/50	Z C P T F	T P C F Z	P D F Z L
5	20/40	P F L O D	D Z F E P	L D O P F
6	20/30	L F O Z C	T O F P C	D Z T O F

3. Read Road Signs 7, 8, 9 and 10.

Stop—School Crossing—No Passing Zone—Yield

4. Is one closer to you? — (8 — School Crossing.)
Is one further away? — (9 — No Passing Zone.)

5. Read the numbers under 11, 12, 13, 14
11-1 12-3 13-4 14-8

TEST NO. 2-74 (ILLITERATE)

(To be used by persons who do not know the alphabet)

Line No.	VISUAL ACUITY	BLOCK A (Both Eyes)	BLOCK B (Right Eye)	BLOCK C (Left Eye)
1	20/200	R	U	L
2	20/100	U R L	L U D	R L D
3	20/70	L R L U D	R L R D U	D U D L R
4	20/50	L D U D R	D L R L U	L U D R L
5	20/40	U D R L R	L R U D U	D U L R L
6	20/30	D R L R U	U R L D U	L U D U R

Codes: U-Up D-Down L-Left R-Right

3. Read Road Signs 7, 8, 9 and 10.

Yield—No Passing Zone—Stop—School Crossing.

4. Is one closer to you? — (9 — Stop)
Is one further away? — (7 — Yield)

5. Read the numbers under 11, 12, 13, 14
11-2 12-4 13-5 14-7

VISION REQUIREMENTS (R/V = Rear View) READING WITHOUT GLASSES

ONE EYE 20/30 THRU 20/40	ONE EYE 20/30 THRU 20/40
OTHER EYE 20/30 THRU 20/40	OTHER EYE 20/50 THRU BLIND
RESTRICTIONS NONE	RESTRICTIONS OUTSIDE R/V MIRROR

READING WITH GLASSES

ONE EYE 20/30 THRU 20/40	ONE EYE 20/50	ONE EYE 20/50	ONE EYE 20/70
OTHER EYE 20/50 THRU BLIND	OTHER EYE 20/50	OTHER EYE 20/70 THRU BLIND	OTHER EYE 20/70
RESTRICTIONS GLASSES REQUIRED OUTSIDE R/V MIRROR	RESTRICTIONS *GLASSES REQUIRED	RESTRICTIONS *GLASSES REQUIRED OUTSIDE R/V MIRROR DAYLIGHT DRIVING ONLY	RESTRICTIONS *GLASSES REQUIRED OUTSIDE R/V MIRROR DAYLIGHT DRIVING ONLY

*License valid only while wearing glasses or contact lenses when applicant requires the aid of glasses or contact lenses to pass drivers license vision examination.

FIGURE 1

decayed light sources, variations in pupil size and the effects of presbyopia. These factors are of less concern when testing is done with a standard distance Snellen chart. Furthermore, the current cost of the screener averages \$350,⁴ while a Snellen eye chart (washable plastic, for 10- to 20-foot lane) costs under \$5.⁶ Although newer automated table-top vision tester models with no movable parts and, thus, less maintenance are now available, cost ranges from \$450-\$600.⁴

The Snellen eye chart is the standard means of assessing visual acuity in the ophthalmologist's or optometrist's office. Not uncommonly,

ophthalmologists or optometrists are called upon to test visual acuity of those assigned driving restrictions or denied driving privileges as a result of telebinocular screening. Frequently, a better visual acuity is obtained so that a lesser or no restriction is required upon testing with the Snellen eye chart. Our study supports these findings. We found a substantial number of participants had different acuities with the two devices; 22% had better acuities with the eye chart, and 1.6 times more restrictions resulted from the telebinocular screener.

Because the upper and lower limits of testing visual acuity were different

for the two devices, it is possible that additional subjects had different acuities but were not detected. (The upper and lower limits of the eye chart are 20/100 and 20/20, while those of the telebinocular screener are 20/200 and 20/30, respectively. Therefore, acuity differences begin at 20/40 and end at 20/100.) Although the different acuity boundaries of the two tests limited our ability to detect all dissimilar acuities, the undetected differences would not affect drivers because restrictions generally begin with acuities of 20/50, with the most severe restriction imposed at 20/70 (*Figure 1*).

The order in which the two devices were used for testing had no effect on outcome. The number of restrictions assigned was not significantly different whether the subject was tested first with the telebinocular screener or the eye chart. Because the testing order was relatively equal in distribution by sex, age and correction type, these factors are not likely to have altered results.

However, the majority of subjects was under 40 years of age. Studies of

those over 40 may be useful in further analyses of acuities obtained with different screening techniques, especially because this population is more likely to have changes in visual acuity between license renewals.

In summary, other than space required for testing, there appears to be no significant advantage of using surrogates such as the telebinocular screener for visual acuity testing. To the contrary, the results of this study suggest that the telebinocular screener causes some drivers to have restrictions that are not needed. The telebinocular screener has optical, illumination, maintenance, and cost disadvantages as well. Very productive screening can be accomplished with the simple, inexpensive Snellen eye chart. Nonprofessionals who would be performing the screening can be easily trained to properly screen with the Snellen eye chart.

Furthermore, the random sample studied was equally divided as to screening technique preference; this indicates that changing devices, or at least offering an alternate choice,

should not be objectionable from the public's point of view. This study supports the recommendation that conventional methods, such as the Snellen eye chart, be used in motor vehicle license branches for visual acuity distance screening. Results of this study indicate that this alternative choice should at least be available.

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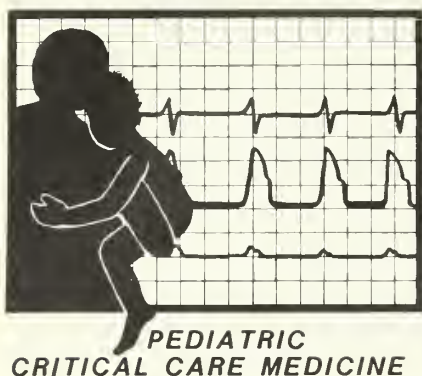
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II. Shock in the Pediatric Patient



Methodist
Hospital OF INDIANA, INC.

THOMAS M. WILLIAMS, M.D.
Indianapolis

A RATIONAL PLAN for the therapy of shock requires a basic understanding of the determinants of cardiac output, blood pressure, and the principles of oxygen delivery to the tissues. In this article, an outline of the basic therapeutic measures for the pediatric patient in shock is presented.

The principles of triage demand that a child in shock receive prompt attention by as many personnel as necessary to complete all diagnostic and therapeutic actions. First and foremost is the prompt recognition of the shock state as outlined in Part I (January 1988, INDIANA MEDICINE). After the diagnosis of shock is made, a step-by-step progression of therapy should proceed rapidly.

Since shock is defined as inadequate delivery of oxygen to the tissues, the most appropriate step to begin with is the provision of oxygen by the most age-appropriate means. Younger children may require an oxygen hood while an older child may tolerate a mask or nasal cannula. In the absence of ability to monitor oxygen saturation, either by arterial blood gas or pulse oximeter, it is best to provide more than enough oxygen regardless of age. The risk of retrolental fibroplasia in newborns is of concern, but should not deter the application of oxygen, as once the patient is stabilized a measurement of arterial oxygen can be obtained. High concentration (>60%) of oxygen can also have direct toxic effect on the lung if given over a prolonged period of time, but this is not a concern in the initial resuscitation effort.

Physician impression that the patient is inadequately ventilating, or is unable to protect the airway, requires immediate tracheal intubation. It should be kept in mind that application of positive pressure ventilation can cause decreased venous return and worsening hypotension that may be only partially offset with fluid resuscitation.

A second priority is establishment of venous access. In children the most accessible veins are those in the antecubital fossae, the dorsum of the hand, or the saphenous veins at the

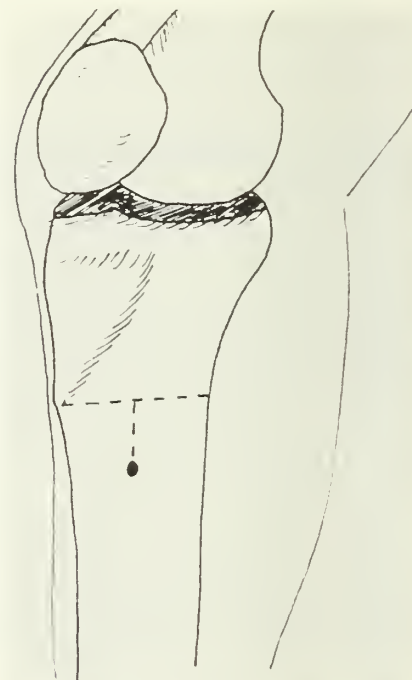


FIGURE 1: Insertion site in the proximal tibia. The tibial tuberosity and medial border of the tibia are palpated. Halfway between these points and 1 or 2 cm distally, the needle is inserted pointing away from the joint space, in a caudal direction. (From Spivey WH: Intraosseous infusions. *J Pediatr*. 111:639-643, 1987.)

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medial malleolus. If none of these veins can be readily cannulated, the external jugular veins or femoral veins can be used. The internal jugular veins and subclavian veins are more difficult to cannulate in smaller children and carry the risk of inadvertent arterial puncture or pneumothorax; however, these sites are appropriate if other sites are difficult, and in the older child they are as useful as in the adult.

In cases of profound cardiovascular collapse, immediate intraosseous infusion can be used. An 18 or 20 gauge spinal needle is used in children less than 18 months old. Older children require a bone marrow needle. Needles manufactured specifically for intraosseous infusion are commercially available. The preferred sites for this procedure are shown in *Figures 1 and 2*. For venous cannulation, plastic or Teflon catheters always should be used as they deliver larger volumes of fluid and are more easily stabilized for transport than metal "butterfly" vein needles.

Fluid Therapy

Once oxygenation, ventilation and intravenous access are established, definitive therapy of the shock state is undertaken. The parameter most easily measured to estimate the severity of shock is the blood pressure, which is a function of cardiac output and the resistance to flow. Cardiac output is a function of preload (approximated by end-diastolic filling volume), afterload (approximated by resistance to ventricular ejection), and myocardial contractility, and is described by the Frank-Starling curve (*Figure 3*). Of these, the simplest to manipulate is preload, hence fluid administration is usually the keystone of initial therapy.

The type of fluid used depends on what is most appropriate to the etiology of shock, and to a certain extent on what is most available. Early traumatic shock with blood loss should be treated with whole blood or packed red cells if possible, though colloid (5% serum albumin) or crystalloid (Ringer's

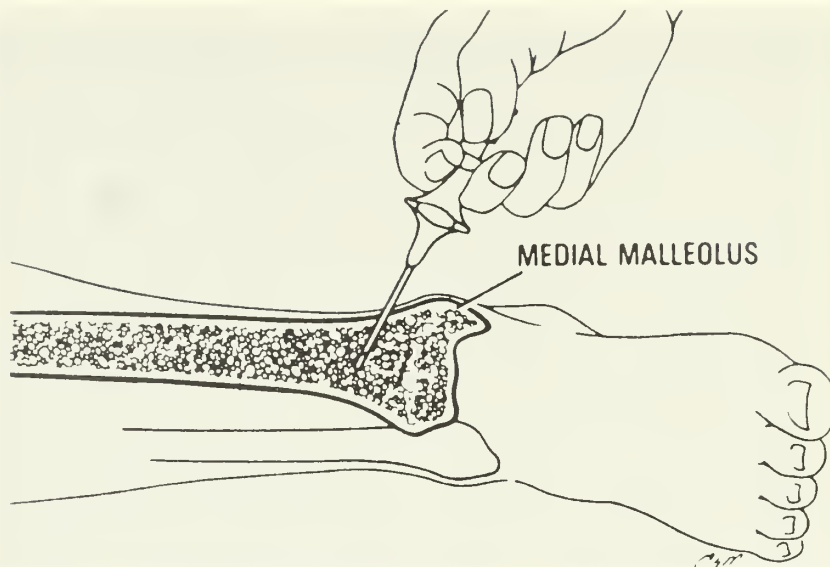
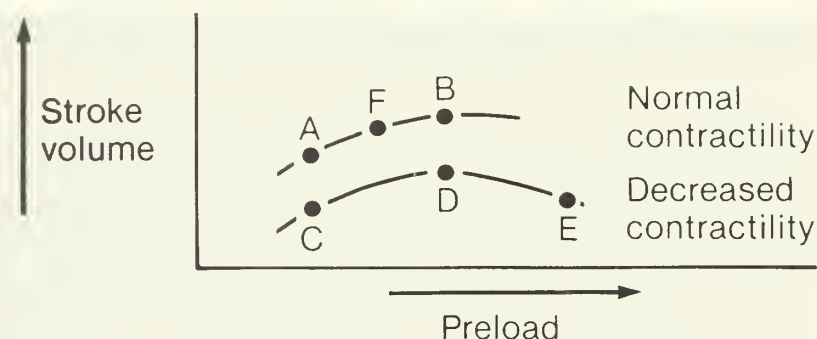


FIGURE 2: The position of an intraosseous needle in the distal tibia. The needle is inserted in the medial surface of the distal tibia at the junction of the malleolus and shaft of the tibia. It is inserted away from the joint space, in a cephalad direction. (From Spivey WH: Intraosseous infusions. *J Pediatr*, 111:639-643, 1987.)



Frank-Starling curve. A → B, Increased preload (volume); C → D, increased preload (volume); E → D, decreased preload (venodilation, diuretics); D → B, increased contractility (inotropes); D → F, decreased afterload (vasodilation).

FIGURE 3: From Levin DI, Perkin RM: Shock. In Levin DI, ed, *A Practice Guide to Pediatric Intensive Care*, St. Louis, 1984, CV Mosby Co.

lactate or 0.9% saline) can be used as well. For shock caused by gastroenteritis or diabetic ketoacidosis, 0.9%

saline is the fluid of choice. For the initial resuscitation of the burned patient, Ringer's lactate is preferred.

TABLE 1

Drugs	Mechanism	Usual dose	Comment
Norepinephrine	α and β agonist	0.05-1.0 $\mu\text{g/kg/min}$	Intense vasoconstriction may mask the myocardial stimulating effect; may dramatically compromise peripheral tissue and organ perfusion; when systolic arterial blood pressure above 90 mm Hg, usually not indicated; now rarely used
Epinephrine	α and β agonist	0.05-1.0 $\mu\text{g/kg/min}$	Positive inotropic and chronotropic effects; intensity of stimulation increases with increasing dose; may lead to renal and mesenteric ischemia; causes tachydysrhythmias and increases myocardial oxygen consumption; has potent metabolic effects (^{18}FFA , $^{18}\text{glucose}$)
Isoproterenol	β agonist	0.05-1.0 $\mu\text{g/kg/min}$	Positive inotropic and chronotropic effects; peripheral vasodilator that diverts cardiac output to noncritical tissue (skeletal muscle); dysrhythmogenic; increases myocardial oxygen consumption
Dopamine	α and β agonist; dopaminergic receptor agonist	2-20 $\mu\text{g/kg/min}$ (2-10 dopa, 5-15 dopa + β , >20 α)	Stimulates cardiac beta receptors by direct and indirect mechanisms; at low doses (<10 $\mu\text{g/kg/min}$) a selective dilation of renal and mesenteric beds occurs; alpha adrenergic effects predominant at higher doses; may increase pulmonary vascular resistance; value in newborns and infants is debatable; dysrhythmogenic
Dobutamine	Selective β_1	1-10 $\mu\text{g/kg/min}$	Positive inotropic effect with minimal chronotropic effect, mild β_2 activity, possible α activity

From Levin DI, Perkin RM: Shock. In Levin DI, ed, *A Practical Guide to Pediatric Intensive Care*, St. Louis, 1984, CV Mosby Co.

The point is that whatever isotonic solution is most available is the fluid of choice. There is no role for the use of hypotonic solutions. Hypertonic solutions are rarely indicated, although current research may define a role for their use in traumatic hypovolemic shock. Military anti-shock (MAST) trousers are manufactured in pediatric sizes and can be used to augment blood pressure as in adults.

The amount of fluid given may vary greatly depending on the disease state and condition of the patient. Generally, 10-20 ml/kg should be given over 5-10 minutes. It is necessary then to approximate the amount of ongoing loss from hemorrhage, emesis or stool, or excess urine output as in diabetes. The amount of fluid initially required should be thought of as an amount over and above ongoing loss. Rapid clinical assessment of response to the fluid challenge in terms of blood pressure, heart rate, urine output, and clinical assessment of perfusion should guide

the need for further fluid therapy. When volume resuscitation approximates 40-60 ml/kg, invasive cardiac filling pressure monitoring may be required. All patients in shock have some element of myocardial dysfunction, and hypotension in the face of large fluid volume resuscitation mandates intravascular monitoring.

A central venous pressure (CVP) catheter may be adequate to guide fluid therapy. A low CVP usually means that more fluid can be safely administered, but a CVP in the range of 7 mm Hg or above, or a rapidly rising CVP with small fluid challenges (especially if shock is unremitting), is an indication for pulmonary artery catheterization. Fluid challenges (5-10 ml/kg) may continue until the pulmonary capillary wedge pressure is 14-18 mm Hg. At wedge pressures greater than this, cardiac output may still improve with fluid administration, but higher pressures promote the formation of pulmonary edema. Fluid

resuscitation generally should be tailored to maintain a wedge pressure of 14-18 mm Hg.

When hypotension persists in the face of adequate intravascular volume (as determined by filling pressures) and control of ongoing losses, other therapeutic modalities are required.

Treatment of Metabolic Abnormalities

Metabolic abnormalities that must be assessed and corrected are acidosis and hypocalcemia. Metabolic acidosis in shock is most often caused by inadequate tissue perfusion. It also can result from excess bicarbonate loss in diarrhea. It usually is corrected by improvement of oxygen delivery with oxygen administration and fluid resuscitation. However, in the presence of severe metabolic acidosis ($\text{pH} < 7.25$), sodium bicarbonate in a dose of 1-2 mEq/kg is indicated with further therapy guided by arterial blood gas values. (Diabetic ketoacidosis is an exception; bicarbonate is rarely needed as the provision of fluid and insulin will usually correct the acidosis.) Animal and human studies currently underway may demonstrate a role for solutions other than sodium bicarbonate in the therapy of metabolic acidosis.

Hypocalcemia is common in all forms of shock and may be especially severe in septic shock. Volume replacement with concentrated blood products and hyperventilation from positive pressure mechanical ventilation may further reduce the level of ionized calcium. In shock caused by sepsis, or if large volumes of blood products are given, it is appropriate to give 10-20 mg/kg of calcium chloride slowly IV over 15-30 minutes with appropriate heart rate and blood pressure monitoring. A central vein is preferred for this drug. Further calcium therapy should be guided by ionized calcium measurements.

Other metabolic considerations that must receive attention in pediatric patients are body temperature and blood glucose. Small children in shock have a difficult time with temperature

regulation. Hypothermia in shock is caused by decreased metabolism secondary to anoxia, and a child whose skin surface area is disproportionately large as compared to volume will lose heat quickly to the environment. This heat loss is aggravated by cold environment (ambulance, emergency or radiology departments) and by the administration of large volumes of fluid. Children with low body temperature will benefit from therapy such as increased ventilator gas temperatures and heating blankets that will lessen the heat loss while the patient's metabolic rate (heat production) increases with the administration of oxygen and fluids.

The younger the child, the smaller the glycogen stores. Children noted to be hypoglycemic on admission require glucose administration. The goal of therapy is normoglycemia, as hyperglycemia can cause osmotic diuresis. Therefore, 0.5 - 1.0 g/kg of glucose (5 - 10 cc/kg of D10NS) should be administered as a bolus, and glucose maintenance administration begun with intravenous solutions that contain glucose. Blood glucose measurement or dextrostix should be used to monitor therapy.

Drug Therapy

When adequate fluid volumes have been administered, and an attempt has been made to correct metabolic abnormalities, the next line of therapy is the addition of catecholamine drugs to improve cardiac output and blood pressure. Table 1 lists the actions and usual starting doses of the various catecholamine drugs. It must be remembered that children may metabolize these drugs differently than adults and that dosage ranges for a desired effect (especially of dopamine) may differ from those of adults, and also among children of different ages.

The most popular catecholamine used in the treatment of shock is dopamine. Children who are critically ill (other than small newborns) eliminate dopamine more quickly than adults. An infusion of 20 mcg/kg/min

in a child produces blood levels comparable to adults given lower doses. The usual starting dose in children is 5 mcg/kg/min, but this can be raised until the desired effect is achieved. A dose of 20 mcg/kg/min (or greater) may be required. If possible, dopamine should be infused through a central line as extravasation can cause tissue necrosis. Dopamine in low dose (<5 mcg/kg/min) should be used either alone or in combination with other catecholamines if decreased urine output is present.

Dobutamine is a beta-adrenergic drug commonly used for cardiogenic shock in adults and is occasionally useful in children. Beta-receptor density increases with age, so dobutamine may be more effective in older children. It seems to be especially useful in those forms of shock characterized by low cardiac output, poor myocardial contractility, and high systemic vascular resistance. Dobutamine can cause a decrease in vascular resistance,

and occasionally one will observe a decrease in blood pressure when dobutamine therapy is begun.

Epinephrine is a potent inotrope that usually can be relied upon to cause an increase in blood pressure. It is useful in septic shock, shock associated with lower heart rates or bradycardia, or when high-dose dopamine (>20-40 mcg/kg/min) fails to maintain blood pressure.

Norepinephrine has more alpha-adrenergic activity and therefore increases systemic vascular resistance. It may be useful in those shock states characterized by low vascular resistance such as early septic shock and shock caused by neurological trauma.

Isoproterenol has very limited indication in the therapy of shock. Isoproterenol can cause a decrease in systemic vascular resistance and therefore decreased diastolic blood pressure and coronary artery perfusion. The main indication for the drug is in the

TABLE 2

Condition	Infant	Child	Adult
Cardiogenic shock	EPI or Dobut DA*	Dobut DA or EPI	Dobut or DA EPI NE
Septic Shock	EPI or Dobut DA	Dobut EPI or DA	Dobut or DA NE or EPI
Hypovolemic Shock	CATECHOLAMINES ARE NOT INDICATED		
Shock from Bradycardia	EPI or ISO	EPI or ISO	ISO or EPI
Anaphylactic Shock	EPI	EPI	EPI
Decreased Renal Blood Flow or Urine Output	DA	DA	DA

Abbreviations: DA=dopamine; EPI=epinephrine; Dobut=dobutamine; NE= norepinephrine; ISO=isoproterenol

*DA at low infusion rates (1 to 2 μ g/kg·min.) may be used in combination with other catecholamines in shock to help maintain renal blood flow. DA is relatively contraindicated in patients with pulmonary artery hypertension.

From Zaritsky AL, Eisenberg MG: Ontogenetic consideration in the pharmacotherapy of shock. In Chernow B, Shoemaker WC, eds, *Critical Care: State of the Art*, Fullerton, Calif., 1986, The Society of Critical Care Medicine.

treatment of hemodynamically significant bradycardia. Epinephrine, with its ability to support blood pressure, may be a better choice in this situation. Vasodilators such as sodium nitropruside may be useful in the treatment of shock characterized by high systemic vascular resistance, but should only be used if continuous intraarterial and preferably pulmonary artery monitoring are available. Table 2 lists suggested choices of catecholamine for shock of various causes.

Therapy of the signs and symptoms of shock should not delay definitive treatment of the etiology. In traumatic shock, bleeding must be controlled, diabetic ketoacidosis must be treated with insulin infusion and infection treated with broad spectrum antibiotics until the causative organism can be identified.

What is the role of corticosteroids in the treatment of shock? Certainly they are of no benefit in traumatic or cardiogenic shock. Their role in shock from infection has been controversial. While no data are available from children, most recent studies on adults have failed to show a benefit from the administration of steroids.

Figure 4 presents a general outline for the treatment of shock in the pediatric patient. If shock is diagnosed and treated rapidly and thoughtfully, with attention to hemodynamic and metabolic parameters, the chances for a successful outcome can be improved dramatically.

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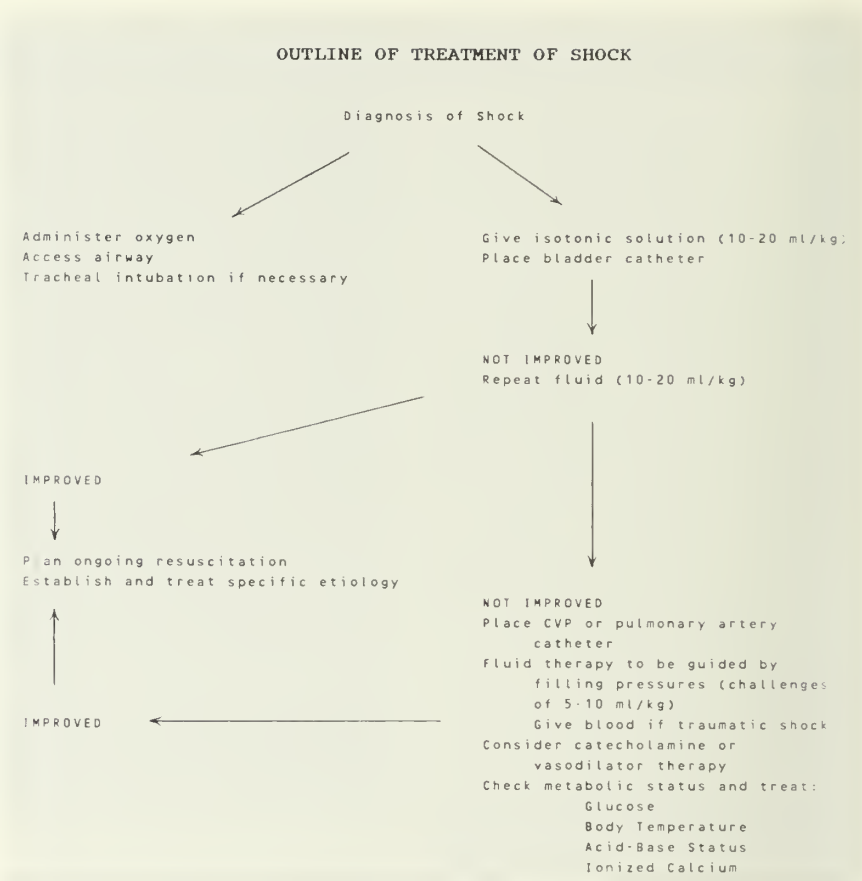


FIGURE 4

- therapy of shock syndrome. In Shoemaker WC, ed, *Textbook of Critical Care*, Philadelphia, 1984, WB Saunders Company.
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RADIOLOGY CLINIC

SECTION EDITOR:
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Director of Chest Imaging
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Indianapolis, Ind.

Abnormal Clavicle in a Patient with Renal Failure

A 28-YEAR-OLD WOMAN presented with a long history of renal failure secondary to chronic glomerulonephritis. She was admitted

From the Dept. of Radiology, Indiana University School of Medicine, Indianapolis, Ind. Dr. Swan is a Resident in Radiology; Dr. Braunstein is a Professor of Radiology.

J. SHANNON SWAN, M.D.
ETHAN M. BRAUNSTEIN, M.D.
Indianapolis

to the hospital for revision of a hemodialysis access site.

Her laboratory data included a

serum calcium of 8.1, phosphate 7.8, creatinine 9.5 and BUN 112. She had no signs or symptoms referable to the skeletal system.

On her admitting chest radiograph, abnormalities of the right clavicle at the acromioclavicular and sternoclavicular joint were seen.

**Patient's Radiograph on Admission:
What Is the Patient's Problem?**

(Diagnosis and Discussion on Next Page)

RADIOLOGY CLINIC

Discussion

The appearance of the distal clavicle and the clavicular head indicate that subchondral bony resorption has occurred, with subsequent "pseudo widening"¹ of the acromioclavicular and sternoclavicular joint. This is the result of secondary hyperparathyroidism (HP), abnormal vitamin D metabolism and chronic renal failure, termed "renal osteodystrophy."² This is distinguished from primary HP caused by intrinsic abnormality of the parathyroid glands,³ and tertiary HP, in which there is autonomous parathormone hypersecretion in patients with a protracted course of secondary HP due to renal failure.¹

Secondary HP is initiated by renal phosphate retention and a consequent lowering of serum calcium,³ as we have in this patient. Increased parathyroid activity in secondary HP is seen along with the other skeletal manifestations of rickets or osteomalacia.² Parathyroid hormone stimulates osteoclastic activity with osteolysis, and it causes bone remodeling as well as elevation of serum calcium levels.^{1,2,3} Because parathyroid hormone has such an important role in bone metabolism and calcium mobilization, the radiographic picture of HP is dominated by bone resorption, which may be subperiosteal, intracortical, endosteal, subchondral, cancellous and subligamentous.¹

Subperiosteal resorption is diagnostic of HP.^{1,3} It is best seen along

the radial aspect of the middle phalanges of the index or middle fingers, or it may begin as lace-like demineralization of the distal phalangeal tufts, progressing to an indistinct cortical margin.^{1,3} Intracortical resorption, or subcortical tunnelling, is manifest by linear striations within the cortex of short, tubular bones. Endosteal scalloping of cortical bone also may occur in combination with subperiosteal resorption.¹

Subchondral resorption, as seen in this patient, is common. The clavicle may be the initial site of skeletal change in HP, but any enthesis may be involved. In addition, the discovertebral junction may be affected, with subsequent widening of the vertebral endplate. Herniation of disc tissue into the vertebral body also may occur.³

Subligamentous resorption also develops at entheses. This may be particularly evident at the ischial and humeral tuberosities, greater and lesser femoral trochanters, the inferior surface of the calcaneus and the coracoclavicular attachments.^{1,3}

An erosive arthropathy of the hands, wrists and shoulders may be seen in HP.¹ Parathyroid cysts and brown tumors also may be noted^{1,3} in both primary and secondary HP.

Calcific deposits can occur in periarticular tissues, viscera, subcutaneous tissues, conjunctiva and vessels. Soft tissue calcification may be seen when the plasma calcium phosphate ion product is greater than 70, which is much

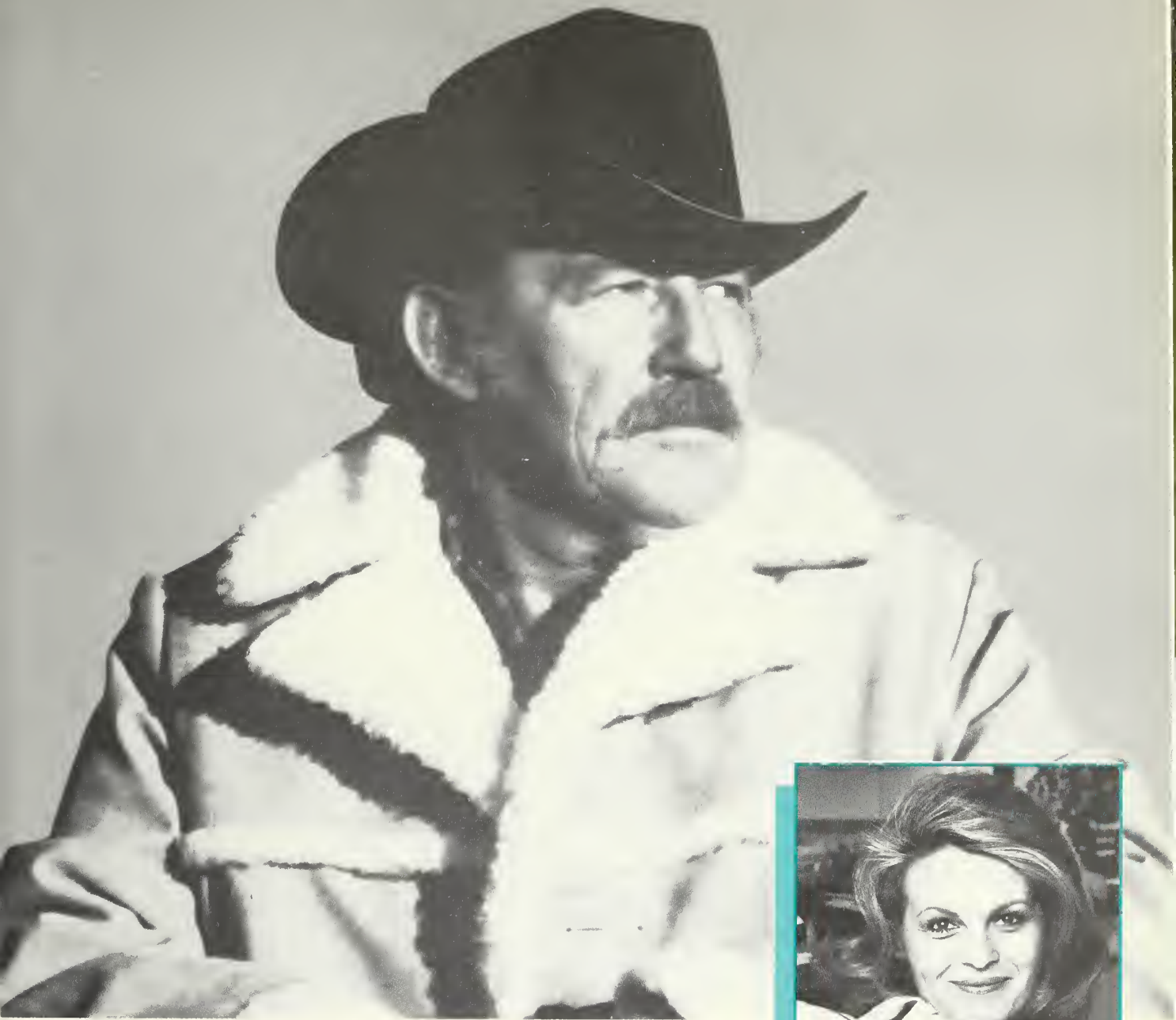
more frequent in renal osteodystrophy than in primary HP due to the primary elevation of serum phosphate levels.^{1,3}

Distinguishing between the types of HP has practical value. Surgical intervention may be needed to control the hypercalcemia of primary and tertiary HP, while secondary HP is best treated medically.¹

With this patient's history, the cause of subchondral resorption of the clavicles is obvious. There are, however, other possible reasons for distal clavicle resorption, including osteolysis complicating rheumatoid arthritis,⁴ other collagen vascular disease⁵ or trauma.⁶

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Dosing Flexibility

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Android^R / F

Fluoxymesterone U.S.P. Tablets, 10 mg.

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BENJAMIN TEPLITSKY, R. PH.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

Category:
Brand Name:
Generic Name:
Dosage Forms:

Category:
Brand Name:

Generic Name:
Dosage Forms:

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Antiviral
Virazole, ICN
Ribavirin
Powder for reconstitution for aerosol

KLONOPIN

Anticonvulsant
Klonopin, Roche

Clonazepam
Tablets

RIBOFLAVIN

Vitamin
Riboflavin (various)
Riboflavin
Tablets

CLONIDINE

Antihypertensive
Catapres, Boehringer-Ingelheim
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Preventing Travelers' Diarrhea

SPECIAL FEATURE

Willingway: A Fellowship in Alcoholism and Drug Addiction

The Use of Rh Immune Globulin: a Review

GREGORY P. SUTTON, M.D.
ARTHUR JAY, M.D.
YOUNG S. LIM, M.D.
JAMES E. NOLAND JR., M.D.
LEONARD I. BORAL, M.D.

THIS IS ONE of a series of papers sponsored by the Joint Task Force on Blood Banking of the Indiana State Medical Association and the Indiana Association of Pathologists. The topics chosen for this series were determined after a review of the responses to a statewide questionnaire on blood banking published in INDIANA MEDICINE in 1986.¹

The use of Rh Immune Globulin (RhIG) has significantly decreased the risk of Rh immunization in this country since its introduction into clinical practice in 1968. The American College of Obstetricians and Gynecologists recommends that a woman's ABO blood group and Rh type be determined as part of the prenatal profile during each pregnancy.² Rh(D) negative women with no anti-D present (unsensitized) should have a repeat antibody screen at 28-29 weeks of pregnancy. If anti-D is absent, prophylactic administration of Rh immune globulin (RhIG) is indicated as noted below. Women with anti-D require the care of a trained perinatologist and should be referred.

The postpartum administration of RhIG to unsensitized Rh(D) negative

mothers who deliver Rh(D) positive infants has been standard practice in this and other countries for many years. A single dose of 300 μ g RhIG is sufficient to prevent Rh immunization in the vast majority of cases. Postpartum prophylaxis should be initiated as soon as the results of cord blood testing are available. If results are unknown at 72 hours, RhIG should be administered with the understanding that a significant number of Rh positive babies are born to Rh negative mothers. If the prophylaxis is not given by 72 hours postpartum, women at risk should be treated at least up to 14 days postpartum, since some protection may be conferred.³

Because approximately 2% of Rh(D) negative women who become sensitized do so prior to delivery, traditional postpartum administration of RhIG may fail to protect some women at risk. Successful trials of antepartum prophylaxis in Canada and other countries⁴ have led to the acceptance of antepartum prophylaxis by the American College of Obstetricians and Gynecologists. Treatment should be given between 28-30 weeks gestation in women at risk provided that anti-D is not detected in the blood specimen drawn prior to RhIG administration. The accepted dose of antenatal RhIG is 300 μ g given intramuscularly. This standard dose also is given postpartum if the infant is Rh(D) positive. Passively acquired anti-D may be detected as long as five months after RhIG administration. An anti-D titer of 1:4 or less is consistent with this finding.

It is important to educate and notify women receiving antepartum prophylaxis so that the postpartum detection of low-titer and anti-D does not lead to a mistaken diagnosis of active maternal anti-D production and therefore to erroneous omission of postpartum

RhIG administration. An infant will occasionally develop a positive direct antiglobulin (Coombs) test as a result of placental transfer of the anti-D. Details regarding antepartum prophylaxis should thus be provided to the attending pediatrician.

Failure to use RhIG appropriately is the most common reason for the persistence of Rh hemolytic disease of the newborn. Failures of prophylaxis may occur if there is an error in the typing of mother's or baby's blood. Occasionally, such information is not transferred to a patient's chart. Other causes of sensitization include inadequate dose of RhIG (see below) or patient refusal.

It has been demonstrated⁵ that a single dose (300 μ g) of RhIG will prevent sensitization by 30 ml of Rh-positive whole blood or 12-15 ml Rh-positive red cells. It is estimated that fewer than 1% of gravid women are exposed to a transplacental hemorrhage of greater than 30 ml of whole blood. Nonetheless, failure to diagnose and treat massive fetomaternal hemorrhage is a cause of failure of RhIG prophylaxis. In high risk situations such as abruption, placenta previa, Cesarean sections, amniocentesis, intrauterine manipulation or manual removal of the placenta, tests should be used to determine the presence of fetal cells in the maternal circulation. First, the red cell rosette test is performed as a sensitive screening procedure, and, if positive, the Kleihauer-Betke test is used to quantitate the volume of fetomaternal hemorrhage.

The red cell rosette test will detect a fetomaternal hemorrhage of about 10ml and consequently is more sensitive than the D^u test.⁶ The basis of this test is that fetal Rh(D) positive cells coated by anti-D in vitro will rosette around strongly Rh(D) positive indicator cells. A positive test shows

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mixed-field agglutination microscopically. The rosette test is qualitative only, and positive results must be followed by a Kleihauer-Betke test to quantify the fetal cells present.

The Kleihauer-Betke test is an acid elution test. Fetal hemoglobin is resistant to acid elution. Therefore, fetal cells retain their hemoglobin and appear as bright pink refractile bodies microscopically, but adult cells appear as pale ghosts, showing stroma only. The percentage of fetal red cells present in the maternal blood film is used to calculate the volume of the fetomaternal bleed. Remember that one 300 μ g dose of RhIG neutralizes 30 ml of Rh positive whole blood or about 15 ml of red cells. RhIG should be administered as soon as possible in the postpartum period.

The D^u test is performed when the initial D typing is negative. Generally, when the D^u test is positive, it is an indication that the mother's red cells carry a weakened form of the Rh(D) antigen that is detectable only by using the antiglobulin D^u test. However, a positive maternal D^u test also may indicate a large fetomaternal bleed if the mother is Rh negative and the baby is Rh positive. Records of prior maternal D^u testing may clarify the true situation. If the Rh type is in question, however, it is recommended that RhIG be administered as discussed previously because administration carries little risk in Rh positive women.

Rh(D) sensitization may occur after spontaneous or elective abortion in Rh(D) negative women. The risk of sensitization correlates directly with gestational age but rarely exceeds 5%. Because transplacental hemorrhage with abortion is generally limited, a 50 μ g dose of RhIG is adequate in abortions occurring before 13 weeks gestation. At 13 weeks or later, a standard 300 μ g dose is recommended. Unsensitized Rh(D) negative patients undergoing treatment for ectopic pregnancy also should be treated with RhIG using similar guidelines.

The risk of fetomaternal exchange

during amniocentesis is well established,⁶ and the risk during chorionic villus sampling also may be present. Although placental localization reduces the risk of transplacental hemorrhage,⁷ all Rh(D) negative patients undergoing midtrimester amniocentesis should receive 300 μ g RhIG after the procedure. Patients undergoing third trimester amniocentesis should receive similar therapy unless delivery is to follow within 48 hours of amniocentesis. In this case, administration may be delayed until the postpartum period.

If the interval between amniocentesis and delivery exceeds 48 hours, post-amniocentesis RhIG therapy is advised. Postpartum RhIG may be omitted if the red cell rosette test or the Kleihauer-Betke is negative and the RhIG has been given less than 21 days before delivery.

Inadvertent transfusion of an unsensitized Rh(D) negative woman with Rh positive blood may cause sensitization. If less than two units have been transfused, RhIG may be given at doses of 20 μ g per ml of red blood cells transfused. Total doses should be divided and given at 1,200 μ g every 12 hours. It has been recommended that treatment should not be employed in postmenopausal women receiving in excess of two units of Rh-positive blood. Caution must be used in the administration of large quantities of RhIG in patients with Rh(D) positive transfusion because the resulting anemia may be severe. Exchange transfusion also may be helpful.

Because as little as 0.03 ml of Rh(D) positive blood may induce primary immunization, red cell contaminated products such as granulocytes or platelets should be Rh compatible whenever possible. This often is not practical, so RhIG should be considered for those Rh negative patients who receive Rh positive platelets or granulocytes.

The use of RhIG after postpartum or postabortal sterilization is controversial, although treatment will preserve the future possibility of trans-

fusing Rh(D) positive blood in emergency situations. The potential for sterilization reversal also must be considered when counseling women regarding post-sterilization RhIG use.

RhIG is a plasma derivative commercially made from pools of thousands of plasma donors. During the process of production, HB AG and HIV viruses are partitioned and inactivated so that RhIG is thought to be free of transfusion transmitted diseases. However, there was a report of possible HIV transmission by the CDC⁹ in 1987 that led to the quarantine of a single lot number of RhIG. This report was later unsubstantiated, and the patient was found to have high risk behavior. Therefore, RhIG continues to be considered a safe product to administer.

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Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.
Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. Associated widened QRS complex or arrhythmia requires prompt additional therapy. Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or

without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of triamterene and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Angiotensin-converting enzyme (ACE) inhibitors can elevate serum potassium; use with caution with 'Dyazide'. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin (ACTH)). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The

following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function. Thiazides may add to or potentiate the action of other antihypertensive drugs. Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak[™] unit-of-use bottles of 100.

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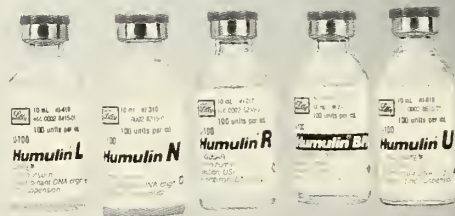
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Any change of insulin should be made cautiously and only under medical supervision. Changes in refinement, purity, strength, brand (manufacturer), type (regular, NPH, Lente®, etc), species/source (beef, pork, beef-pork, or human), and/or method of manufacture (recombinant DNA versus animal-source insulin) may result in the need for a change in dosage.

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CONTINUED FROM PAGE 302

Cardiovascular Emergencies

"Cardiovascular Emergencies 1988" is the title of a conference to be held May 12 to 14 at Mariner's Inn, Hilton Head Island, S.C.

Speakers will include Dr. Lewis Goldfrank on "Community E.R. Approach," May 12; Dr. Sam Wann on "CV Diagnostic Techniques," May 13; and Dr. Noel Mills on "Emergencies in CV Surgery," May 14.

For more information, contact the Midwest Cardiovascular Research Foundation, P.O. Box 11788, Fort Wayne, Ind. 46815—(219) 483-4897.

Berkshire Medical Conference

The Fourth Annual Berkshire Medical Conference will meet in July. Advances in Cardiology will be covered on July 14 to 16. Special Challenges in General Medicine will be the subject for July 21 to 23.

The fees are \$295 for one conference and \$500 for both. The sponsors are the University of Massachusetts Medical School, the Berkshire Medical Center and the Berkshire Area Health Education Center.

For details write the Berkshire AHEC, 725 N. Street, Pittsfield, Mass. 01204—(413) 447-2417.

Computers in Medicine

The 12th Annual Symposium on Computer Applications in Medical Care will meet Nov. 6 to 9 at the Sheraton Washington Hotel, Washington, D.C. Articles, demonstrations, or panel proposals are now being called for.

For a copy of the announcement and application form, write to the George Washington University Medical Center, Office of Continuing Education, 2300 K St., N.W., Washington, D.C. 20037.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it, however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

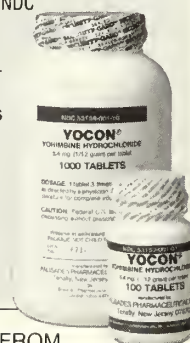
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

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Mohs Micrographic Surgery for Difficult Skin Cancers

C. WILLIAM HANKE, M.D.
A. CASSANDRA CONNER
Indianapolis

Abstract

Several effective methods are available for the treatment of primary skin cancer. When the same methods are used to treat recurrent nonmelanoma skin cancer, however, the cure rate drops by 50%. An alternative method, Mohs micrographic

surgery, has been designed to treat recurrent basal cell and squamous cell carcinomas and certain other primary tumors. Mohs micrographic surgery provides a cure rate of more than 95% with maximal conservation of normal tissue.

MOHs MICROGRAPHIC SURGERY (MMS) is a surgical method for removing skin cancer that utilizes excision of tissue in thin layers, color-coding of excised specimens with tissue dyes, tissue mapping, and the preparation and microscopic examination of horizontal frozen sections. MMS offers several advantages over standard methods including higher cure rates, maximum conservation of normal tissue and preservation of important anatomic structures.

Historical Aspects

MMS has evolved greatly since the 1930s when Dr. Frederick E. Mohs developed the original fixed-tissue chemosurgical technique. With this technique zinc chloride paste was applied to the cancer and left in place overnight. This fixed the tissue to a depth of several millimeters and allowed the physician to excise the cancer

on the following day without bleeding or local anesthesia. After the tissue was removed, a map of the operative site was drawn, and the specimen was divided and color-coded. Frozen horizontal sections were cut from the undersurface of each specimen and examined microscopically. If residual tumor was observed, the fixative was reapplied to the tumorous area and the procedure was repeated on the next day.

The fixed tissue MMS technique resulted in cure rates approaching 99% for primary basal cell carcinoma and 96% for recurrent basal cell carcinoma.¹⁻⁷ However, there were several disadvantages. Since the zinc chloride fixative paste was applied overnight, the procedure was time consuming. The patient had to return for treatment on at least two consecutive days, and large tumors required many days to treat. After a tumor-free plane was achieved, a thin layer of fixed tissue remained in the wound that would slough off in 10-14 days. This residual fixed tissue precluded immediate reconstruction. In addition, most patients experienced moderate to severe burning pain for many hours after the application of the zinc chloride paste.

Modern MMS Technique

The chemosurgical technique was modified by Mohs⁸ in 1953 for the treatment of eyelid cancers and for general use in the late 1960s by Tromovitch.⁹ They reported that the horizontal excisions could be performed more efficiently by eliminating the zinc chloride paste and using local anesthesia. This modification of the original technique enabled the surgeon to perform several stages in one day, greatly reducing the time required for treatment. In addition, the discomfort to the patient was reduced and, since no fixed tissue remained in the wound, reconstruction could be performed immediately.

In the modern MMS technique, the zinc chloride paste is completely eliminated and a local anesthetic, usually 1% lidocaine with 1:100,000 epinephrine, is infiltrated around the tumor. A thin layer of tissue is excised and is divided into sizes appropriate for frozen section processing (*Figure 1*). The edges of the specimens are color-coded to ensure precise orientation of the tissue, and a corresponding map is drawn. A dressing is applied to the wound, and the patient is escorted to the waiting room.

The tissue is immediately processed in an adjacent frozen section

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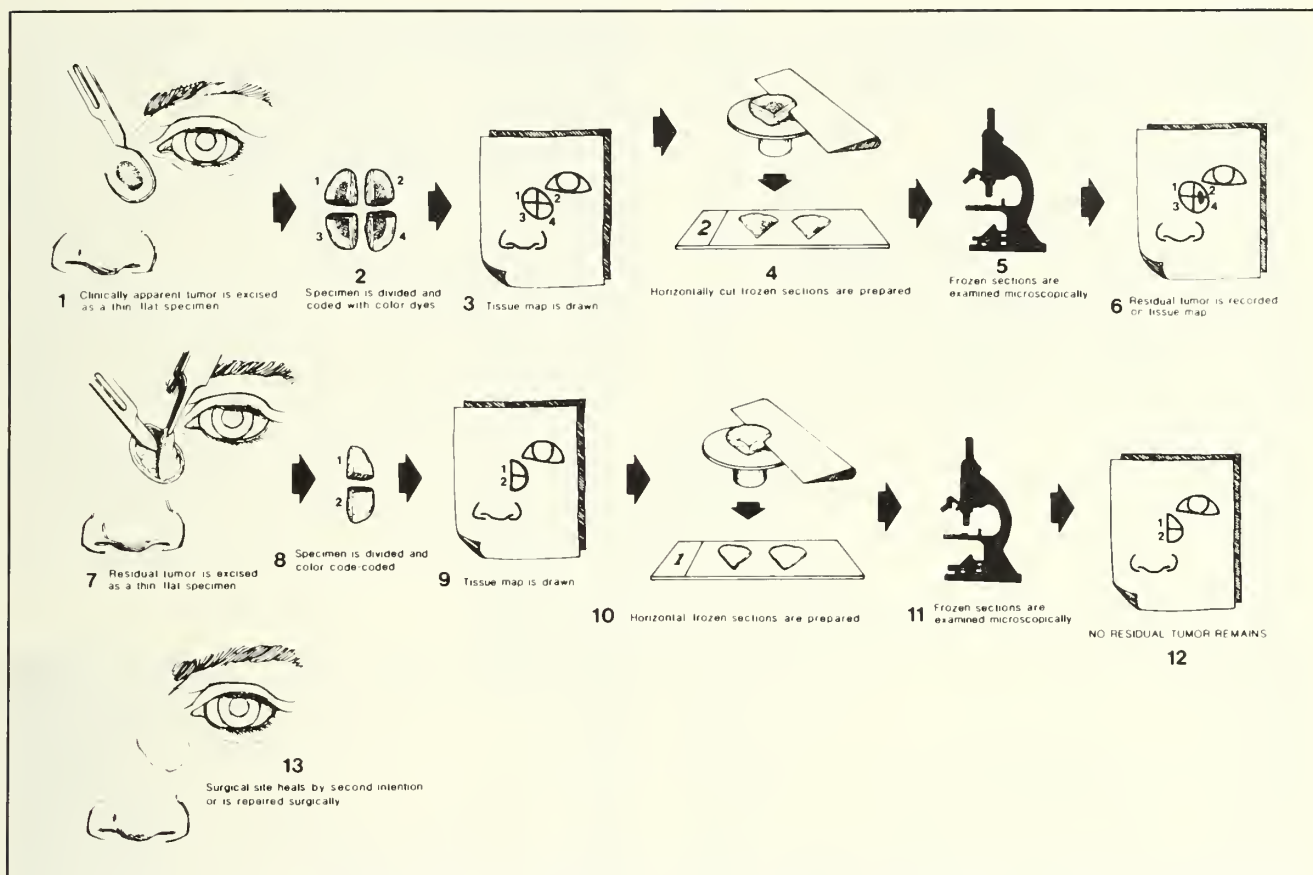


FIGURE 1: Mohs micrographic surgery involves sequential excision of tissue in thin horizontal layers until a microscopic tumor-free plane is reached.

laboratory. Each specimen is flattened on a cryostat object disc, and frozen sections are cut horizontally from the undersurface. This allows microscopic examination of essentially 100% of the deep and peripheral margins immediately adjacent to the wound surface. The frozen sections are stained with hematoxylin and eosin or toluidine blue. They are examined microscopically by the Mohs micrographic surgeon, and the location of any remaining tumor is marked on the tumor map.

If residual tumor is present, the patient is returned to the operating room and the area is reinjected with lidocaine. The procedure is repeated until a tumor-free plane is established. Most cases can now be completed in one morning; however, extensive cases may require several days of outpatient

surgery. Advanced cases that involve underlying vital structures or complex wound closures are sometimes done in the general operating room in conjunction with other departments including plastic surgery, otorhinolaryngology and ophthalmology.

Indications and Cure Rates

Recurrent basal cell and recurrent squamous cell carcinoma are the commonly accepted indications for MMS. Primary skin cancers can be treated effectively with conventional methods such as surgical excision, curettage-electrodesiccation, radiation therapy and cryosurgery. All four methods result in cure rates of approximately 90% for primary basal cell carcinoma. However, when the same methods are used to treat recurrent basal cell car-

cinoma, the cure rate drops to approximately 50%.¹⁰ MMS, on the other hand, results in cure rates of 96.8% for recurrent BCC.¹¹ MMS is also indicated as the surgical modality of choice for tumors with a high likelihood of recurrence, tumors with indistinct visual margins, tumors that may require disfiguring surgery, and unusual tumors including dermatofibrosarcoma protuberans, leiomyosarcoma, microcystic adnexal carcinoma, Merkel cell carcinoma, sebaceous carcinoma and atypical fibroxanthoma.

The conservation of normal tissue is an important advantage of MMS. A minimal amount of normal tissue is sacrificed during the removal of the tumor. This allows healing by second intention or primary closure, in many cases with excellent cosmetic results

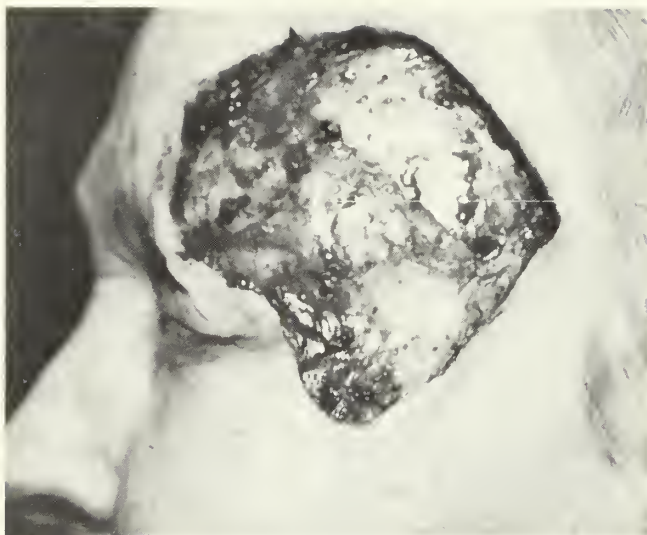


FIGURE 2: A large wound has been created after Mohs micrographic surgical removal of a recurrent basal cell carcinoma on the temple.



FIGURE 3: The wound has been partially closed using redundant skin from the cheek.



FIGURE 4: Immediately after suture removal, adhesive strips have been placed over one corner of the wound. The remainder of the wound will heal by second intention in six weeks.



FIGURE 5: The surgical site demonstrates a good cosmetic result at 12 months.

(Figures 2-8). When reconstruction is necessary, the reconstructive surgeon is provided with a smaller surgical defect and more normal tissue with which to work.

MMS offers the highest available cure rate for difficult types of skin cancer while conserving the maximum amount of normal tissue. Although this

treatment is not available in all areas of the country, a referral to a specialized center usually can be arranged. It is important for primary care physicians as well as those who are involved in treating skin cancer to understand the indications for MMS so that the most appropriate therapeutic decisions can be made.

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FIGURE 6: A recurrent basal cell carcinoma is present in the left nasolabial fold.



FIGURE 7: This large tumor-free defect demonstrates the actual size of the tumor after four Mohs micrographic surgical stages.



FIGURE 8: A good cosmetic result is evident at eight weeks following healing by second intention.

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How to Develop a Laser Center

KAY BALL, RN, MSA
Columbus, Ohio

THE USE OF lasers in the field of medicine is quickly evolving as an efficient and innovative method to treat many types of disorders. Physicians and patients who have had experience with lasers report that the procedures are beneficial in treating disorders ranging from plan-tar's warts to endometriosis, due to more precision, quicker recovery time and fewer complications.

With the increased growth in the popularity and effectiveness of laser surgery, several health care facilities throughout the country are examining the possibility of implementing a laser center within their institutions. The investment of time and finances in laser technology involves a long-term commitment of support. Looking to the future, this decision will have a major impact on the facility's goals and objectives, since laser technology is constantly developing.

Where to Begin

When a facility decides to initiate a laser center, several practical steps are necessary to make this venture successful. Careful planning, including input from facility officials and physicians, must be completed. To develop



The laser must be checked before each surgery for proper beam alignment.

this program, the concerns and interests of each party must be assessed and evaluated. Physicians are especially important since they are ultimately the decision-makers of whether the laser will be used for a procedure. It is the physicians, based on their diagnosis and referrals, who will actually determine the case load of the laser center.

Health care facility officials are also an important part of the planning process due to the long-term commitment. The facility must evaluate the proposed program and assess its direction and needs. Through cooperative efforts of the administration, physicians and the laser team, goals and objectives must be set for the laser center and communicated to all those involved.

The planning process also should involve a comprehensive survey of community needs and local competition. Depending on the predominance of a

certain age or sex, various uses for the laser may be more popular. Also, other health care facilities in the area must be surveyed regarding laser centers or equipment that may already exist. If other programs do exist, the analysis of the community and referring physicians will determine if the need is great enough to support an additional center.

The possibility of joining with other facilities to form a laser center is also an option. This cooperative effort may reduce initial costs while providing consistency and growth of laser technology within a geographical area. After all of the planning and survey data have been collected, facility officials must evaluate the information and decide whether or not to begin a laser center.

Forming a Committee

After facility officials have committed to the development of a laser center, a laser committee should be formed. The committee should consist of a representative from administration, the operating room supervisor, the nurse in charge of lasers, a physician from each of the specialty areas that will use lasers, and an anesthesiologist. These professionals will have a variety of committee responsibilities, all of which center upon the goals, objectives and direction of the laser center. The laser committee will be actively involved in managing the laser program. The committee should meet regularly and be open so that newly laser-credentialed physicians can be introduced and encouraged to attend the meetings.

The laser committee will have other responsibilities, in addition to providing direction for the center. Encouraging staff and referring physicians to use the center through ongoing promotion and educational pro-

The author is director of Laser Surgery Services for the Grant Laser Center, 111 S. Grant Ave., Columbus, Ohio 43215.

For more information on lasers, write the American Society for Laser Medicine and Surgery, Inc., 813 Second St., Suite 200, Wausau, Wisc. 54401.

grams is necessary. Networking among the physicians urges them to stay abreast of the growth in laser technology. The laser committee also will be responsible for forming a credentialing policy for physicians preparing to use the laser.

The Credentialing Process

Committee-approved coursework providing 12 to 16 hours of continuing education combined with hands-on experience is a practical recommendation for a credentialing protocol. A laboratory session allowing hands-on experience is necessary for the physician to understand laser-tissue interaction. After attending the course, the physician should be required to prove proficiency and safety by serving under a preceptor physician already credentialed in the use of the laser. During the initial phases of laser program development, this preceptorship may be difficult to enforce, as there may be few physicians within the health care facility already credentialed in laser application.

Specialty departments should review the laser credentialing recommendations from the laser committee. The executive committee or credentialing board would handle the final granting of laser privileges. Laser-credentialing information must be kept on file for easy retrieval when needed. In some programs, monitoring of each physician's laser utilization is reviewed annually to encourage application of current, state-of-the-art technology.

If a teaching institution develops a laser program, concerns about whether residents should use the laser must be addressed. For example, a policy could be proposed that would require residents to view a video on laser biophysics, safety and application. The resident would then be required to meet with the laser team members to review the laser to be used in a particular procedure so that he or she will have a thorough understanding about that specific laser's safety and application. Ideally, residents should attend



Laser team members drape the articulated arm of the carbon dioxide laser.

a laser seminar that includes hands-on experience.

Safety Practices

Another important role of the laser committee is to develop specific rules and regulations for safe laser practice. Policies should be written to enforce laser safety within each program. This provides consistency and protection should any problems arise. Several national organizations, such as the American National Standards Institute, can provide various documents and reports to serve as guidelines for those rules and regulations. The institute is currently reviewing a recent draft of "Safe Use of Lasers in the Health Care Environment," a document due for publication this year. Safety-related rules and regulations are important due to the medical consequences should the equipment not be used properly. Because the laser has the potential to cause eye damage, medical surveillance of the laser team's ocular health is important. Initial baseline eye examinations compared to eye

examinations upon job termination or after any ocular accident will provide legal protection for the institution.

Funding Your Center

One of the most important aspects of developing a laser center within a health care facility is securing the proper laser system. There are many ways in which laser equipment can be procured. If funds are available, outright purchase is possible. However, due to the tremendous expense involved, leasing the equipment may be more practical. When leasing or financing the laser system, several factors must be noted. Interest rates and terms should be examined in order to receive the best financial deal. The amount of time for the loan or lease is also important due to the changing technology. Because lasers are a growing area, what may be the latest technology today could be outdated tomorrow.

Physicians also can develop a laser foundation to procure a laser when the health care facility is unable to support the purchase financially. An agreement



The laser team members and surgeon must be familiar with the control panel of each type of laser.

then can be proposed in which the facility pays the foundation each time the laser is used. Sometimes laser manufacturers or distributors offer a "per-use charge" for the laser in order to place the unit within the health care facility.

Choosing the Right System

The type of laser system secured depends on many factors. The availability of the laser is important because the facility would not want to purchase a laser that would take six months for delivery. Warranty and maintenance of the system should be addressed with regard to availability and costs.

Service is just as important, if not more important, than the actual securing of the laser equipment. A 24- to 48-hour service response is a normal request. The facility should also address other questions such as: Will the manufacturer provide training for minor troubleshooting on the laser? What is the cost of a service contract after the warranty has expired? What does the warranty cover?

Accessory costs and availability should be questioned. Is the laser

adaptable to only one type of microscope or endoscope? Does the purchase price include the laser foot switch or smoke evacuation unit? What future changes can be expected in the laser adaptability to other accessories?

The involvement of the Food and Drug Administration (FDA) also should be realized and understood. The FDA investigates each type of laser and provides its recommendations for approved applications. When a facility acquires a laser system, the FDA's information can prove valuable. For example, one manufacturer's surgical Nd:YAG laser may be used for dermatology procedures or endometrial ablation, while a competitor's Nd:YAG may not have received FDA approval for those specific applications. Therefore, it is important to know if the specific laser is currently under investigation.

Any laser purchase or lease should involve careful study and planning. Special water and electrical needs should be addressed and any necessary equipment installed before the laser arrives so that immediate utilization can be possible. An Nd:YAG laser stored

unused in a corner of the OR, while plans for water and electrical requirements are still being investigated, can be financially devastating to a program.

Assembling Your Staff

After the equipment has been secured, proper staffing of the laser center is vital. The laser "team" is a major factor in the program's success. The staff's dedication is necessary to provide an organized and consistent program. Job descriptions should reflect the difference between laser procedures and traditional OR duties. A clinical laser nurse will be required to educate and assist patients throughout their perioperative laser experience. Because the procedure is fairly new and unfamiliar to patients, a comprehensive education program is crucial.

A laser safety technician (LST) is also an important member of the laser team. This person has the responsibility of seeing that the laser equipment is run properly and safely. Some laser centers have given the LST the authority to turn off a laser system if safety guidelines are not being followed.

A biomedical laser technician is also vital to the laser center, because this person acts as a troubleshooter for minor problems. Also, when a health care facility expands and incorporates many lasers into its laser program, service contracts become financially impractical. As an alternative, a biomedical laser technician could be used to provide preventive maintenance and laser service. A log of laser service and maintenance should be kept to document service and any problem trends.

Establishing Charge Levels

When the laser team has been recruited and properly trained, the laser program can be put into action. When the laser center is in operation, careful budgeting and financial planning are necessary. Charges for services should be consistent with similar laser programs within a geographical

area. DRGs and insurance reimbursement amounts also should be taken into consideration when developing the charge. Other factors that should be studied include labor, cost of the laser equipment and supplies, and laser maintenance and service contracts.

In addition to charges, postoperative instructions dealing with care after laser procedures should be developed. These written instructions should be reviewed with and given to the patient. A copy should be maintained on the chart for documentation.

Throughout the use of the laser, a log should be designed to document laser use. If possible, the laser log information should be entered on a computer for quick retrieval of statistics and review of laser system use for preventive maintenance.

Making the Most of Marketing

To ensure success of a new laser center, continual marketing is necessary. A comprehensive marketing plan designed to create awareness of the center among physicians, patients and the community will achieve this objective. Marketing efforts can include advertising the center through print and broadcast media. Because advertising can be an expensive venture, the market segment must be specifically defined in order to get the most for the advertising dollar. Public relations, a more cost-effective communications tool, uses community rela-



An esophageal tumor is treated through a gastroscope with an Nd:YAG laser. Appropriate safety eyewear must be worn by everyone in the room, including the patient.

tions and publicity to create awareness. Also, physicians and laser center officials can offer seminars or give presentations to local groups. Tours of the facility, accompanied by a comprehensive brochure and physician presentation, also can stimulate public interest in the technology.

Developing a comprehensive laser program requires the continuing efforts of many people. Careful organization, coordination and dedication are vital. The ever-changing laser technology mandates that a laser program be prepared to adapt to these changes at all times.

Medicine's Lighter Moments

TED L. GRISELL, M.D.
Indianapolis

ALL MEDICAL SCHOOLS have a few characters who, because of their teaching skills or unusual characteristics, endear themselves to their students in an inimitable fashion.

Dr. Willis D. Gatch of Indiana University was such a person. Many and varied stories exist about Dr. Gatch. Several stories that serve as a source of amusement and as vignettes of his work endear him to his students.

Many years ago, as dean of the medical school, he was helping plan the budget to be submitted to the state legislature. At this time, I was a student assistant in the dean's office. One day Herman Wells, president of I.U.; Ward Biddle, university comptroller; and at least two members of the state legislature were discussing the budget in Dr. Gatch's office.

In the early afternoon, as I was taking notes for Dr. Gatch, he turned to me and said, "Would you please call Mrs. Gatch and tell her that I am going to be late for lunch?" I went to the phone in the corner of the room and called Mrs. Gatch, a delightful lady whose voice carried rather well. When I told her the doctor would be late for lunch, she replied, in a voice audible to all in the room, "Please tell Dr. Gatch that he's already been home for lunch."

Another episode involving the dear dean occurred during this same period.

Dr. Gatch, like many other surgeons connected with the university, was in demand in hospitals throughout the state as a surgeon for prominent citizens and for other patients when the outcome was questionable. He frequently traveled by interurban system, and at other times he was driven by his chauffeur.

THE DEAN

On one occasion, he was driven to Anderson to perform surgery late in the afternoon and planned to return to Indianapolis that evening. The referring doctor in Anderson offered to take Dr. Gatch to the interurban station. Dr. Gatch boarded the interurban and not until he was approaching the Indianapolis city limits did he remember he had left his chauffeur and car in Anderson.

On another occasion, a U.S. district attorney who was a personal friend of Dr. Gatch was hospitalized with a severe heart attack. Val Nolan was in a private room at Robert Long Hospital in Indianapolis. As an attending house staff member, I was responsible for reporting on Mr. Nolan to Dr. Gatch as he made his rounds. Because some facts concerning the magnitude and severity of the case still were undetermined, I elected to discuss the case in private with Dr. Gatch in a rather large bathroom off the patient's room.

During the discussion, Dr. Gatch rested on the toilet seat while listening to the rather lengthy report on Mr. Nolan's condition. When I finished my report and the doctor was ready to leave, he automatically reached around and flushed the toilet. Such a reflex ac-

tion might indicate in some people's opinion a one-track mind. However, there was nothing one-track about Dr. Gatch. He simply had the capabilities to study at length a particular subject.

In another case, we were treating a patient who had a tumor at the outlet of the stomach. The treatment involved transecting the stomach at its outlet and placing an innerostomy tube into the upper portion of the small intestine for feeding purposes. To facilitate this method of feeding, the patient was allowed to eat by mouth. The food was aspirated from the stomach, its hyperacidity was neutralized by a bicarbonate solution, and it then was reinserted into the intestinal tract. This bypassing system worked fine for a week or two, until the patient developed a massive generalized swelling of fluid.

Based on a search of the medical literature concerning the first studies of electrolyte imbalance being performed at that time, it was determined that a sodium block had caused the edema. Dr. Gatch and I had a rather lengthy discussion on the topic.

About four and a half years later, after my return from military service, I ran into the good doctor on a downtown street. We had not seen each other or corresponded while I was away. When we greeted each other, the second comment he made concerned the patient with the edema. He said the case we discussed at our last meeting definitely was due to a sodium blockage and that techniques had been developed to monitor these conditions. He said if we had a similar case again he was sure we could prevent the retention of fluid.

These episodes indicate to me the singleness of purpose, the unusual perspicacity and intelligence of the dean.

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Neuroscience Update for the Primary Care Physician

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BONE MARROW TRANSPLANTATION

I.U. Announces Plans for National Conference

THE THREE-YEAR-OLD Bone Marrow Transplantation (BMT) program at Indiana University Medical Center is expanding to care for an increasing number of patients whose disease can be controlled or cured with transplantation.

Patients most likely to benefit from the expansion are those who would respond to allogeneic transplantation (marrow is donated by a matched or closely matched person), autologous transplantation (marrow is taken from a patient before intense chemotherapy, then replanted), and bone marrow purging (often carried out in conjunction with autologous transplants).

Because of I.U.'s program expansion, the university's BMT team will co-host (with the Leukemia Society of America, Indiana Chapter) a national conference on April 28 and 29 dealing with the most recent advances and newest applications of BMT.

The conference theme will be "The Collaborative Management of the Bone Marrow Transplant Patient." Pioneers in this field from around the country will share their experience with conference participants. Their discussions will include the treatment of cancers, blood-related diseases such as anemia, and immunologic disorders.

The course faculty consists of direc-

tors of some of the most important BMT centers in the country. They will include Doctors Rainer Storb of Seattle, John H. Kersey of Minnesota, George W. Santos of Johns Hopkins, Richard J. O'Reilly of Sloan-Kettering, James O. Armitage of Nebraska and Roger D. Gingrich of Iowa. Representatives from the I.U. BMT Program will report on their areas of research as well.

The April 28 program, designed for physicians and nurses, will focus on Advances in Bone Marrow Transplantation, with emphasis on options for patients who lack suitable donors; the April 29 program will focus on Psycho-

BMT: Preferred Therapy for Certain Diseases

Bone marrow transplantation (BMT) was introduced to clinical medicine in the late 1960s. Since then, this treatment modality has increased rapidly in importance, applicability and numbers. In particular, during the last five years, BMT has become the preferred therapy for many hematological, oncological and immunological diseases.

Many advances have been made to decrease the mortality rate associated with the treatment by effective prophylaxis and early treatment of complications.

Presently, there are basically two categories of indication for bone marrow transplantation:

- To replace a qualitatively or quantitatively inadequate bone marrow function, such as in severe aplastic anemia, immunodeficiencies or thalassemia; and

- To overcome the side effects of high-dose chemotherapy/radiation therapy on bone marrow stem cells, such as in leukemia, lymphoma or solid tumors.

The bone marrow can originate from the patient himself (autologous), from an identical twin (syngeneic), or from another human being (allogeneic).

In the latter situation, until recently, only sibling donors who were completely HLA-identical with the patient could be used safely. This means that for only one in every four patients who otherwise would be eligible for a transplant, a suitable donor can be identified. More recently, attempts are being made to use less compatible family members or even HLA-identical unrelated volunteer donors.—Jan Jansen, M.D., Director, Bone Marrow Transplantation Program, I.U.

social Concepts in BMT. Activities will be at the Lincoln Hotel and University Conference Center, 850 W. Michigan St., Indianapolis.

For more information on the conference, contact Carol Lewis, Registrar, CME Division—(317) 274-8353.

I.U.'s BMT program is one of 17 that is participating in the National Bone Marrow Donor Registry for patients who do not have an HLA-identical sibling, according to Dr. Jan Jansen, associate professor of medicine and director of the program.

The BMT program will be conducted in a new unit for adults and adolescents consisting of 18 beds at University Hospital. On both days of the conference, participants may tour the new transplant unit, which utilizes the newest concepts in patient protection with respect to air handling, water supply and food preparation. (The original four-bed unit at Riley Children's Hospital will once again be used for children. Both units will be run by one combined nursing and medical staff.)

Indiana University has begun one of the first National Cancer Institute-approved testicular cancer treatment



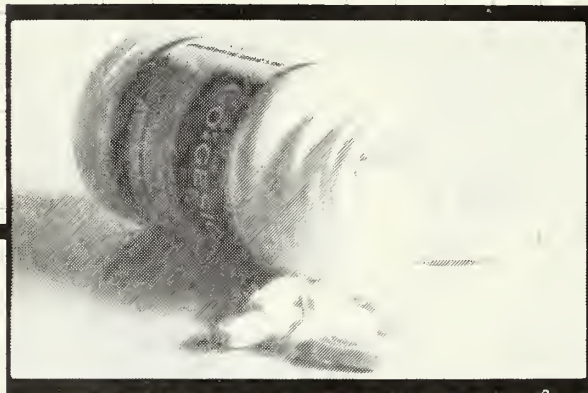
Laminar Flow Patient Isolation units such as this one are designed to remove bacteria from the air surrounding a bone marrow transplant patient's bed. A plastic "care wall" divides the room into two sections; on one side is the air filtration unit and on the other side is the patient's bed. At full operation, the I.U. BMT team is expected to conduct up to 120 transplants per year.

programs to include a new combination drug regimen with autologous transplantation. Malignant lymphoma, another cancer that responds well to

this type of treatment, is also treated at I.U. The program soon will include transplantation to treat ovarian cancer and acute myelogenous leukemia.

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Understanding Your Finances Through Budgeting

NO ONE HAS to tell you that the practice of medicine faces an increasing number of changes and obstacles as the competition for patients heats up. How you deal with these changes over the next few years will determine, to a great extent, the shape of your future practice. As an indication of how well they are weathering this storm, physicians and their advisors are looking feverishly at "their bottom line."

Yet, these same people often think very little about the numbers that determine their net income, their patient collections and their expenses. Commonly, physicians have no real understanding either of what their expenses are or even what they should be. More commonly, these same people dismiss any systematic reviews of their finances as time-consuming and not worth the effort. This is where they are wrong.

By knowing and predicting your probable income and expenses, you can begin to control their component items. You can spot trends and aberrations before they become problems that only radical financial actions can control.

Practice budgeting presents the best way to understand and to control your finances. Over time, it gives you a systematic, disciplined approach from which you may analyze your practice's financial picture.

Budgeting is a means of anticipating various items that compromise both

your income and your expenses and projecting those costs over time. By using budgets, you are able to monitor carefully your cash flow to attain the proper amount of earnings needed to provide funds (or financing) for your

Do You Know What Your Practice Income and Expenses Are? If Not, Budgeting May Be Just What the Doctor Ordered . . .

plans. Other benefits of budgeting include:

- It formalizes your planning effort;
- It provides definite goals and objectives;
- It establishes personal practice benchmarks with which to evaluate subsequent performance;
- It uncovers potential trends on an itemized basis before they become problems; and
- It coordinates the activities of the entire organization by integrating the total collections and expenses.

There are a number of different types of budgets, including capital budgets, operating budgets and continuous capital budgets.

Capital budgets generally have a long time horizon, often exceeding 10 or more years. The objective of a capital budget is to provide a steady stream of cash to purchase or otherwise acquire capital assets.

Distinguish this from an operating budget, ordinarily set to cover a one-

year period. This period generally corresponds to the fiscal year upon which the corporation is based. Typically, operating budgets are further divided into quarters, and each quarter is subsequently divided into months. As the year progresses, you can track your progress through the budget.

The third most common type of budget, and the type discussed in this article, is the continuous or "perpetual" budget. A continuous budget, like an operating budget, covers a 12-month period, except that new months are constantly added and deleted as the current month ends.

Advocates of continuous budgets argue that it stabilizes the budgeting horizon by narrowing the focus. If you do use a continuous budget, it is important that you constantly monitor your "year-to-date" progress based upon the calendar year. This can be done simply by adding the two additional columns, "198X Year To Date - Actual" and "198X Year To Date - Budgeted." Only in this way will you know where you stand with respect to your annual budget.

Be aware that the success of your budget will be determined largely by the way the budget is set and the effort you put into creating the budget.

Creating a Budget

The most important aspect of budgeting, and probably one of the hardest to overcome, is determining what numbers to look at—what income figures, and what expenses?

Unfortunately, no one can do this for you. Only you can determine the priorities regarding your income and expense items. However, to get you started in the process, refer to *Exhibit*

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The contributing authors, Sandra E. D. Smith, J.D., M.B.A., and Patricia M. Salmon, are principal attorneys and consultants to The Health Care Group, Plymouth Meeting, Pa.

A. Ultimately your budget will look something like this. You should, however, adapt it to your specific practice.

Exhibit B is a more detailed income-source budget. It, too, should be

adapted to your specific practice situation. For example, if you have two offices, one north and one east of town, then income from each one would be separately categorized, as either Source I or Source II.

You probably have some idea of how much income is attributable to each major source. However, it is probably beginning to fluctuate as you are buffeted by new sources of competition. You must begin to track the different

EXHIBIT A
Physician P.C., Master Operating Budget
for the Period (Month) of _____

	<u>Actual</u>	<u>Budget</u>	<u>Variance</u>	<u>Year ago</u>	<u>Variance</u>	<u>Year to Date Actual</u>	<u>Year to Date Budget</u>
TOTAL INCOME:							
Office							
Hospital							
Outpatient							
Other							
TOTAL							
TOTAL EXPENSES:							
Admin. Payroll							
Payroll Tax							
Building Rent							
Utilities & Maintenance							
Equipment Lease							
Office Supplies							
Prof. Supplies							
Office Expenses							
Prof. Insurance							
Admin. Fringe Benefits							
All Other Expenses							
Prof. Fees							
TOTAL							
DUE TO NON-OWNER PHYSICIANS							
NET PROFIT TO OWNERS:							
Salaries							
Medical Expense							
Reimbursement							
Retirement Plans							
TOTAL OWNER PROFIT							
RETAINED EARNINGS							
Project 1 ()							
Project 2 ()							
Total variance							
Reasons for variance							
Plan of action							

sources accurately to evaluate each source independently. For example, you should immediately know how much income is attributable to your participation in a particular HMO. If this percentage becomes too high, you should be concerned that the HMO will have too much control over your practice and can dictate too many terms in your HMO contract to its favor. Likewise, if your practice hospital-generated income (surgery, inpatient

testing, etc.) falls, and your outpatient income rises, you will know that you are becoming more valuable to your am-surg clinics and less profitable to your hospital.

The best way to start to create your budget for different sources of income is to measure the amount of income attributable to each source over some period, such as four months. Then look closely at these numbers. Are they increasing, decreasing or "randomly"

fluctuating? If they appear to fluctuate randomly, then simply average the four numbers. Be aware, however, that our goal is to minimize all "random" fluctuations except minimal shifts. If these figures are, however, generally increasing or decreasing, then average the three different percent changes in the numbers over the four months. Now average the four monthly income numbers. Take the average income amount, and use that for your first time

EXHIBIT B
Supporting Master Budget Information
for the Period (Month) of _____

	<u>Actual</u>	<u>Budget</u>	<u>Difference</u>	<u>Year ago</u>	<u>Difference</u>	<u>Year to Date Actual</u>	<u>Year to Date Budget</u>
TOTAL COLLECTIONS							
Source I—Cash/Check							
—Blue Shield							
—Medicare							
—HMO							
—Commercial							
—Workers Comp.							
—Other ()							
TOTAL							
Source II—Cash/Check							
—Blue Shield							
—Medicare							
—HMO							
—Commercial							
—Workers Comp.							
—Other							
TOTAL							
LAB—TOTAL CHARGES							
X-RAY—TOTAL CHARGES							
TOTAL CHARGES:							
LESS TOTAL ADJUSTMENTS:							
LESS TOTAL WRITE OFF:							
TOTAL COLLECTIONS:							
TOTAL PERIOD VARIANCE							
REASON FOR VARIANCE							
PLAN OF ACTION							

period. Then, for each subsequent month, increase or decrease the budgeted amount by the average percentage change. These numbers will probably not be correct, but they will give you a good place to get started.

It's much easier to calculate average expenses, because you already have all of your actual expenses recorded in your practice checkbook. In addition, some expenses, such as rent, vary only annually, and then, only by a predetermined amount.

For those expenses that do vary, go back and record each monthly expense by category for a 12-month period. Now use the same method explained above to determine the "average" expense per period, except now use the four-month periods for each that correlate to seasonal differences, such as utility expenditures that are higher from November to February or personnel differences (more physicians vacation in July and August as the patient load and administrative staffing necessities lessen so August should be a cut-off month—May-Aug.), etc.

Adjusting the Numbers

Now that you have determined your average income sources and expenses, and the amounts by which they increase or decrease over some time frame, you should consider any factors that may not already be included in the numbers themselves. For example, if you know in January that you will begin to lease a piece of equipment in March, you should increase the budgeted "equipment" amount for March forward by the amount of the lease expense. Likewise, if you know you will be hiring someone new, incorporate the additional salary, payroll tax, fringe benefit expenses, etc. into the budget for the period when that person will be employed. Repeat this process for each "event" that you

believe will have a significant impact on the practice's finances.

Completing the Budget

Remember, budgeting is an ongoing process, no matter which type of budget you use. The more you do it, the better you will become at it. Do not be surprised if your "first" budget is not accurate. It never will be.

The important thing is that you note the variance between what you budgeted and what actually happened and why there was a difference. Especially note any increasing or decreasing variances over time (two to three months). This will help you to spot any trends. For example, there may be seasonal and annual trends that account for the variances. These should be distinguished from the one- or two-month differences that may be caused because of factors such as vacations and extraordinary events.

Generally, we suggest that you review these budgets monthly to spot and highlight the trends. Then, at the bottom of each page, write in a "Plan of Action," even if the plan is "to monitor the monthly write-offs."

The Budgeting Process

We recommend that the administrator or office manager be responsible for formulating the first draft of the budget. After all, that is who will be most familiar with your practice income and expenses.

Once the first draft of the budget has been prepared and reviewed, it should be submitted to the physician, or group of physicians, for review. Generally, there is some discussion between the administrator and the physician(s) as to any changes and/or adjustments that should be made in the budget.

This budget is then returned to the administrator to make any necessary changes and to formalize the budget. Again, the budget is submitted to the

physician(s) for review and ultimately a final budget is prepared. Remember, the numbers are only "approximate." You are not looking for exact dollars and cents here, except where possible. You are looking for the big picture finances.

Also, once finalized, the budget is not "set in stone." It should, however, be altered only if there is an extraordinary event (e.g., a physician-owner quits).

Since the purpose of the budget is to track the collections by individual source and expenses by general grouping, it is important that the budget be clearly understandable and readable by those who must work with it. Also, the type of budget you use is a matter of personal preference and objective.

For example, referring to the operating budget (*Exhibit A*), notice that the master budget is basically a very simple receipts and disbursements statement. Notice too that it has a column titled "variance" that shows you where you stand in reference to your budget.

Because the budget is intended to enable profit planning, systematic cash flow analysis and trend analysis, it is important that the variance columns be tracked closely and that the reason for the variance be explained. Likewise, any trends should be spotted and, where detrimental, corrective actions should be discussed, decided upon and implemented.

Once you become familiar with this basic form of budgeting, there are more complexities that can be added. However, now the point is to get a general grip on the cash flow of the practice and to understand the interrelationships between "cash in and cash out." After all, it is your work that brought the cash in; you should know where it came from, where it went to and how the process evolved. Remember, it is your business!

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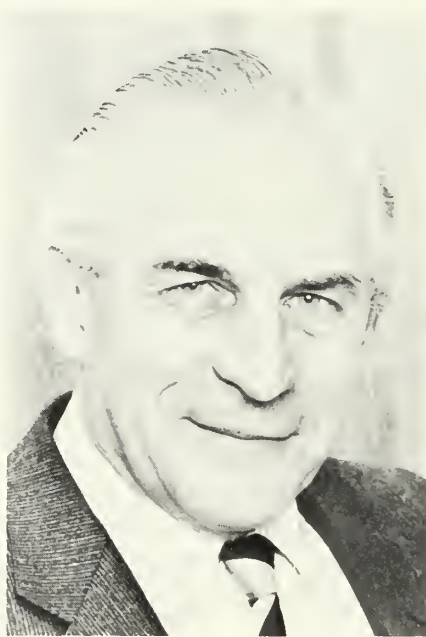
British Surgeon to Serve as 8th Joseph C. Finneran Professor

AUSTIN L. GARDNER, M.D.
Indianapolis

PROFESSOR SIR GEOFFREY SLANEY, KBE FRCS, the recently retired president of The Royal College of Surgeons of England, will serve as the eighth Joseph C. Finneran Professor at St. Vincent Hospital on May 6 and 7.

He is the professor of surgery emeritus of the University of Birmingham.

He was educated at the Universities of Birmingham, London and the University of Illinois, and he served as a Warren Cole Research Fellow in 1955 and 1956. He was professor of surgery at the University of Birmingham from 1966 to 1987. He is the honorary fellow of numerous surgical associations throughout the world. He has been a visiting professor in Rhodesia, Valencia, S. Africa, New Zealand, Ireland, Australia, Hong Kong, Sweden, India, several U.S. universities and other places too numerous to mention. He also presented The Hunterian Oration to The Royal College of Surgeons of



Professor Sir Geoffrey Slaney

England in 1987 on "John Hunter's Contribution to Vascular Surgery."

Professor Slaney was invited to become the eighth Finneran Professor by Dr. Harris B Shumacker, distinguished emeritus professor of surgery of Indiana University who in June 1987 was inducted as an honorary

fellow of The Royal College of Surgeons. This is a great honor for Dr. Shumacker, as there have been very few American surgeons so honored.

Dr. Bud McDougal, chairman of the Dept. of Surgery at St. Vincent Hospital, will chair the program, which will include Professor Slaney's address on "The Surgical Treatment of Aneurysmal and Occlusive Disease of the Abdominal Aorta," based on a well documented series of 1,350 cases followed over a 25-year period. Case presentations and discussion of general interest will be presented in the afternoon; on Saturday morning, Dr. James A. Madura will conduct the program at Myers Auditorium at Indiana University School of Medicine. Professor Slaney will present a paper on "Vascular Disasters in the Popliteal Fossa," dealing with an experience with popliteal entrapment, popliteal aneurysm and popliteal vascular trauma.

At a dinner Friday evening, a paper on "Six Centuries of Surgeons" will be presented by Professor Slaney.

We look forward to Professor Slaney's visit with great anticipation. He will be accompanied by his wife, Lady Josephine Slaney.

The Joseph C. Finneran Surgical Educational Endowment Fund was established in April 1980 by Sister Theresa Peck and Doctors Harris B Shumacker and Robert F. Nagan of St. Vincent Hospital, Indianapolis, shortly before Dr. Finneran's death.

Dr. Finneran had come to Indianapolis from Johns Hopkins

The Finneran Fund

Hospital at the request of Dr. Shumacker when he assumed the professorship of surgery at Indiana University School of Medicine. Upon completion of his residency

training and after service with the armed forces in Europe, Dr. Finneran became chairman of the surgical service at St. Vincent Hospital. In this role, he succeeded Dr. Willis D. Gatch, who himself had come to Indiana after residency training at Johns Hopkins under the famous Dr. William Halstead.

Schedule of Events

Friday, May 6, Cooling Auditorium

Moderator, Morning Session: Bud H. McDougal, M.D.

- 9:00 Registration and Coffee
- 9:25 Welcome—John J. Maher, Executive Vice-President and
Chief Operating Officer, St. Vincent Hospital
- 9:30 Introduction of Professor Sir Geoffrey Slaney by Harris
B Shumacker Jr., M.D.
- 9:45 Eighth Annual Joseph C. Finneran Lecture, "The Surgical
Treatment of Aneurysmal and Occlusive Disease of the Ab-
dominal Aorta"—Professor Sir Geoffrey Slaney
- 10:45 Break
- 11:00 Case Presentations:
Daniel W. Dro, M.D. and Robert F. Nagan, M.D.
- 11:30 Surgical Treatment of the Geriatric Patient—Diane W.
Healey, M.D.
- Noon Discussion
- 12:15 Lunch—Conference Center

Friday, May 6, Cooling Auditorium

Moderator, Afternoon Session: Austin L. Gardner, M.D.

- 1:30 Case Presentations:
Jerremy M. Ramp, M.D. and E. Dale Habegger, M.D.
- 2:00 Considerations for Prophylactic Splenectomy in Patients
with Infective Endocarditis—Joseph E. Steinmetz, M.D.
- 2:30 Discussion
- 2:45 Break
- 3:00 Case Presentations:
Bud H. McDougal, M.D.
- 3:30 Dilemmas in Diagnosis of Splenic Rupture—Rosemarie
Lopez, M.D.
- 4:00 Discussion
- 4:15 Adjournment

Friday Evening, May 6

Woodstock Country Club, 1201 W. 38th St., Indianapolis

- 6:30 Cocktails
Piano Recital by Marianne Price
- 7:30 Dinner
Speaker: Professor Sir Geoffrey Slaney—"Six Centuries of
Surgeons"

Saturday, May 7, Myers Auditorium, Wishard Memorial Hospital

Moderator: James A. Madura, M.D.

- 8:00 Carotid Occlusive Disease: Investigational Interest, Surgery
and Results—Michael C. Dalsing, M.D.
- 8:30 The In Situ Femoral Bypass Technique with Emphasis on
Perioperative Duplex Scanning—Dolores Cikrit, M.D.
- 9:00 "Vascular Disasters in the Popliteal Fossa"—Professor Sir
Geoffrey Slaney
- 10:00 Adjournment

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AUXILIARY REPORT

Anne Throop, Indianapolis
ISMA Auxiliary President 1987-88

A year in review —

In April 1987 plans had been made, goals were set and the framework for another auxiliary year—our 60th—was in place. The message to our members was to become "Advocates for Medicine"—to speak out, to be visible in the community. This was no easy task with a membership made up of community leaders who have been involved in projects furthering the cause of public health and the medical profession for a long time, but have kept it a closely guarded secret. Suddenly, we are telling them to let the public know that physicians' spouses care—in other words, no more "low profile." Our image is what we do!

Adolescent health issues concern us because the future of our youth is at stake. Awareness of these issues is growing in the counties, and related projects and programs are being developed. A program at the ISMA Convention on the AMA Adolescent Health Initiative opened our eyes to the scope of the problem and the need for our involvement. Counties have begun to recognize where the need is. Teen "hot lines," Smokefree Society programs in the schools, AIDS education programs and driver safety education programs in the high schools are using AMA and AMA Auxiliary produced materials. Our county leaders and members are discovering the value of our resource materials and are beginning to use them in coalition with other organizations.

Legislative efforts focused on getting to know our legislators, legislative study groups, the key contact program, helping the ISMA and educating our members. Our "Day at the Capitol" and luncheon with the legislators during the short session were very successful.

Fund-raising for AMA-ERF is reportedly successful, not surprisingly

in large part due to the abundance of enthusiasm on behalf of the state chairmen. The county and state sharing cards continue to raise the largest portion, not only in our state, but also nationally.

Membership development is present in everything we do! We started the year with a new approach, an all-day

Leadership development is another area demanding constant attention. Every board member has been a part of this effort by being producers, directors and performers during the month of September when we took our "show"—the mini-confluences (leadership training sessions)—to all three geographical areas of the state.



Each year the Indiana delegation participates in the AMA Auxiliary's annual business session, conducted every June. State presidents serve as chairmen of state delegations.

workshop in Indianapolis devoted entirely to "sowing seeds for growth," the theme for this year's campaign. The membership committee is a hard working bunch. New efforts have been made to establish contact with the student and resident spouses. They are the future of our organization! The potential for growth is everywhere, in organized counties as well as in the counties where there is no auxiliary, and the member-at-large coordinator has been in pursuit of these potential members all year.

A new membership brochure will be available at Annual Convention time. It will be a new tool to make the job a little easier for next year's county and state membership teams.

Visits to the counties are always an important part of our leadership development and the most effective and enjoyable way of communicating with our members. Good communication is the key to a successful program, and it has been a memorable year in that respect!

Special events such as the White House Conference for a Drug-Free America have contributed to the quality of this past year. Will this lead to statewide efforts by auxiliaries to achieve a drug-free environment in our schools? We hope so.

Our image is what we do! In the final analysis everything we do will reflect upon the medical profession in a positive way. We are "Advocates for Medicine."

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Contact:

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ISMA-A President
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MEDICAL PLAN 3

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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Vision Screening

CONTINUED FROM PAGES 307-310

1. Restriction or withdrawal of drivers' licenses due to decreased distance visual acuity is the responsibility of whom?
 - a. physician
 - b. commissioner of the Bureau of Motor Vehicles
 - c. driver education instructor
 - d. driver license screener
2. Which of the following are not important factors in central vision acuity screening?
 - a. illumination
 - b. object distance
 - c. corrective lenses in place during screening
 - d. age
 - e. sex
3. Advantages of distance vision acuity screeners, such as the Keystone telebinocular screener, include which of the following?
 - a. cost
 - b. upkeep of equipment
 - c. space requirements
 - d. nearness illusion
 - e. testing skill requirements
4. Driving is restricted to daylight hours when the corrected acuity in one eye is 20/50 and the other is equal to or worse than which of the following?
 - a. 20/40
 - b. 20/50
 - c. 20/70
 - d. 20/80
 - e. 20/100
5. The screening technique for obtaining central visual acuity is standardized nationwide.
 - a. True
 - b. False
6. What percentage of people (according to this study) are likely to have different acuities when screened with a Snellen eye chart and a telebinocular screener?
 - a. 5
 - b. 10
 - c. 25
 - d. 75
 - e. 95
7. A person is not allowed to wear his/her corrective lenses while having his/her vision screened.
 - a. True
 - b. False
8. What percentage of participants were found to have better distance acuity with the Snellen eye chart than with the Keystone telebinocular screener in this study?
 - a. 1
 - b. 5
 - c. 10
 - d. 20
 - e. 40
9. The distance vision screening method used for driver licensure probably has no effect on the number of annual highway accidents.
 - a. True
 - b. False
10. At what distance visual acuity do driving restrictions begin in Indiana for a person who does not wear corrective lenses?
 - a. 20/30
 - b. 20/40
 - c. 20/50
 - d. 20/70
 - e. 20/100

Following are the answers to the CME quiz that appeared in the March 1988 issue: "Neurofibromatosis: An Update."

- | | |
|------|-------|
| 1. c | 6. a |
| 2. c | 7. c |
| 3. c | 8. d |
| 4. c | 9. c |
| 5. c | 10. d |

MARCH CME QUIZ Answers

Answer sheet for Quiz: (Vision Screening)

- | | |
|--------------|---------------|
| 1. a b c d | 6. a b c d e |
| 2. a b c d e | 7. a b |
| 3. a b c d e | 8. a b c d e |
| 4. a b c d e | 9. a b |
| 5. a b | 10. a b c d e |

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before May 10, 1988 to the address appearing at the top of this page.

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D., Indianapolis

CAMP LITTLE RED DOOR, sponsored by the Little Red Door, Marion County Cancer Society of Indianapolis, is the only summer camp in Indiana planned especially for children and teen-agers with cancer. It is located at Bradford Woods, Indiana University's Outdoor Education Center. All facilities are accessible to wheelchairs, and the camp maintains an experienced medical staff. Medications, oral and intravenous, can be given. The fee per camper is \$75 and financial assistance is available. Contact: Little Red Door, 1801 N. Meridian St., Indianapolis 46202—(317) 925-5595.

SECOND INTERNATIONAL CONFERENCE ON HEAD AND NECK CANCER, sponsored by the American Society for Head and Neck Surgery, will be held at the Sheraton Boston Hotel and Towers in Boston July 31-Aug. 5. The goal of this conference is to review the current status of treatment and research in head and neck cancer with the aim of stimulating and guiding the direction of future basic and clinical research efforts.

Cancellations on or before June 1, 1988, will receive a full refund; after June 1, the refund will be \$100 for physicians/surgeons and \$50 for residents/fellows. All cancellations must be received in writing to qualify for a refund. Contact: We Plan Meetings, Inc., 1503 15th Street, NE, Rochester, Minn. 55904.

BREAST CARE 1988, April 29-30. University of Health Sciences/The Chicago Medical School, Department of Surgery and the Office of Continuing Medical Education. This symposium brings together a faculty of internationally renowned authorities in breast care. Contact: Elizabeth Bruechert—(312) 578-3214.

HIPPLE CANCER RESEARCH CENTER, DAYTON ONCOLOGY SOCIETY presents the 1988 distinguished oncologist lecture series. For information on any subject, call

(513) 293-8508. The schedule is as follows:

Dr. Irwin Krakoff, Head, Division of Medicine, M.D. Anderson Hospital and Tumor Institute—"Cancer Chemotherapy: Progress, Problems, and Pitfalls," Good Samaritan Hospital, noon, April 29; Dr. Stanly Cohen, Nobel Laureate, Professor of Biochemistry, Vanderbilt University Medical Center—"Epidermal Growth Factor and Its Receptor," St. Elizabeth Medical Center, noon, May 12.

Dr. Joseph V. Simone, Director, St. Jude Children's Research Hospital—"Studies in Childhood Leukemia," Children's Medical Center, 8:30 a.m., June 1; Dr. Hilary Koprowski, Director, Wistar Institute—"Research on Human Tumor Antigens," St. Elizabeth Medical Center, noon, Sept. 12.

Dr. Loretta Itri, Director, Clinical Investigations, Hoffmann-La Roche, Inc.—"Interferons and Other Cytokines: Current Results and Future Directions," Good Samaritan Hospital, noon, Oct. 17; Dr. Emil J. Freidreich, Chairman, Department of Hematology M.D., Anderson Hospital and Tumor Institute—"The Treatment of Systemic Cancer: Lessons from Adult Acute Leukemia," Kettering Memorial Hospital, noon, Dec. 8.

FIRST LADY Nancy Reagan's breast cancer surgery last fall touched off renewed interest in the disease among women throughout the country. To help teach them more about the disease, which will kill 41,000 women in the United States this year, the American Institute for Cancer Research is distributing a free booklet, "Questions and Answers About Breast Lumps and Breast Cancer." The booklet provides information on breast cancer, benign breast lumps, breast self-examination, and resources for more detailed information. The non-profit institute also is offering free breast self-examination kits that include instructions on the correct ways to perform self-exams. For a free copy

of the breast-cancer booklet, send a self-addressed, business-size envelope with 39 cents postage to the American Institute for Cancer Research, Dept. QA 11, Washington, D.C. 20069.

OHIO VALLEY-LAKE ERIE ASSOCIATION of CANCER CENTERS, 11th Annual OLACC Meeting, June 10-11. Host institution: Methodist Hospital. Contact: Dixie Estridge—(317) 929-3733.

LEXINGTON, KY., FIRST ANNUAL MARKEY CANCER CENTER SYMPOSIUM: Biological Response Modifiers, April 15-16. Sponsored by the Lucille P. Markey Cancer Center. Contact: Hilary Wood, R.N., M.S.N., Lucille P. Markey Cancer Center, 800 Rose St., Lexington, Ky. 40536—(606) 257-4500.

BIOTECHNOLOGY AND MEDICINE SERIES: Biotechnology Targets AIDS: A Clinical Perspective, Antivirals, Vaccines and Diagnostics, April 22-23, Crystal City Marriott, Arlington, Va. A conference designed to provide an update on the latest advances in biotechnology for the clinical management of AIDS. You'll learn how various biotechnological tools are combining to contribute to the development of effective AIDS antivirals (in particular) as well as HIV vaccines and new diagnostic tests. For more information, call 1-800-621-8335, and ask for Biotechnology.

COPE magazine, in cooperation with the American Cancer Society, will sponsor the first annual National Cancer Survivors Day June 5. The day will be set aside as a celebration of life—an opportunity to recognize survivors, educate the public about the gains made in cancer research and treatment, and to give hope to those still in therapy. We urge you to tell patients about the day. For more information, or to become involved in this celebration, call 1-800-343-COPE.

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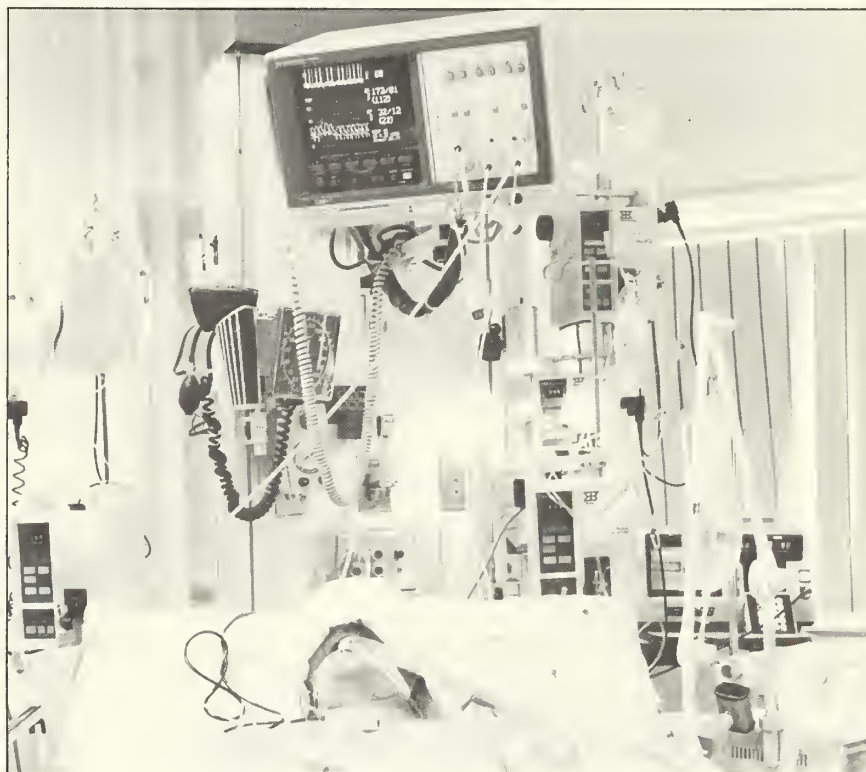
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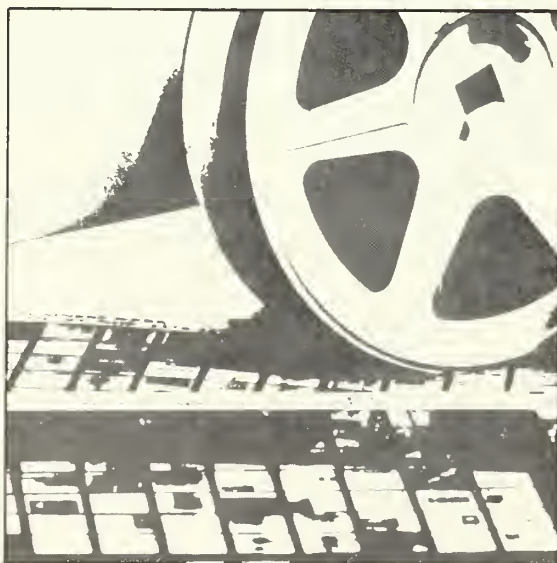
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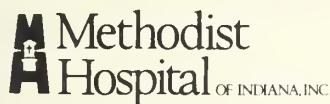
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The service was begun after the alcohol and drug treatment hospitals learned that between 40% and 60% of their patients did not have a family physician. Physicians in the network were chosen after a random mailing to physicians in an eight-county area who were members of the Indiana State Medical Association, a previous referral source and/or routinely listed as family doctors. About 100 physicians were members of the network as of Jan. 1.

The Koala Center in Lebanon, Ind., is the pilot hospital in the program, available to patients, families and alumni.

New Treatment for Small Cell Lung Cancer Studied

A new treatment for small cell lung cancer is being studied by a group of investigators from the Hoosier Oncology Group (HOG), a state-wide network of physicians and nurses involved in cooperative cancer research efforts.

Lung cancer is the leading cause of

cancer-related deaths for men and women in the United States. Small cell carcinoma comprises approximately 20% of these cases.

The treatment involves the use of drugs recently approved by the Food and Drug Administration for extremely ill patients with testicular cancer who have not responded to other chemotherapy regimens. I.U. physicians for some time have been studying the drugs in the treatment of advanced testicular cancer.

According to Dr. Patrick Loehrer, assistant professor of medicine at I.U. School of Medicine and co-principal investigator of these studies, "Ifosfamide in combination with cisplatin and VP-16 has been effective in producing durable remissions and probable cures in some seriously ill patients with testicular cancer. We now want to evaluate the effectiveness of these drugs in treating small cell lung cancer, which is far more common than testicular cancer."

Dr. Loehrer and his group are seeking previously untreated patients with advanced stage small cell lung cancer to participate in the study.

For more information about the study, call the HOG headquarters at the Walther Medical Research Institute, (317) 927-2115.

I.U. Survey Indicates Most Hoosiers Do Not Know Much About AIDS

Most Hoosiers feel they do not know much about AIDS—this as a result of the 10th Indiana Poll, conducted by the Indiana University Center for Survey Research.

Six hundred ninety-five individuals or family groups were polled by a completely at random process of selecting phone numbers by a computer.

Those who said "not too much" (38.4%) and "hardly anything" (15.4%) add up to a majority of respondents.

Only 8.2% felt they knew a great deal about the disease. The choices offered were "know a great deal," "quite a bit," "not too much," and "know hardly anything."

The elderly seem to be not as well

informed as their juniors. In the age 65 and over group the total of those who know "not too much" and "hardly anything" was 72.9%. This contrasted to a finding of 54.9% on the same responses by the younger set.

Hoosiers feel it is OK for children with AIDS to attend school—the "OK" votes won by four-to-one. There was no difference in opinion by those who had children in school and those who had no children in school.

The poll did not collect opinions on the subject of whether retaining an AIDS child at home for instruction by parents might be safer than exposing the child to multiple human contacts outside the home. This is an important consideration. AIDS patients usually die of ordinary infections that overwhelm them because of their lowered or absent immunity responses.

New Carbohydrate Beverage Designed to Help Athlete

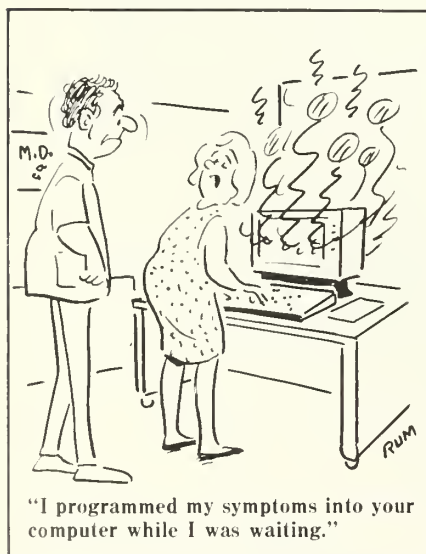
Serious athletes, such as runners, cyclists, swimmers and triathletes, traditionally eat large volumes of high-carbohydrate foods for several days before a competition to increase their energy stores for better performance.

The Quaker Oats Company, maker of GATORADE® Thirst Quencher, has introduced GatorLode™ High-Energy Carbohydrate Drink Mix, a carbohydrate source scientifically formulated to help athletes improve their performance.

Scientific research indicates that exercise performance is enhanced as the carbohydrate content of the diet is increased, a fact that makes carbohydrates a valuable nutrient in an athlete's performance.

According to Peggy Dyer, director of new beverages for Quaker Oats, three 12-ounce servings of GatorLode™ provide as many carbohydrate calories as two servings of spaghetti, four medium potatoes and four slices of bread.

GatorLode™ is available in 19-ounce canisters at some sporting goods stores and by calling (317) 543-5553.



For the Asking . . .

- "Health Effects of Low-Level Radiation" is the title of a 26-page publication available from the American Council on Science and Health. The report concluded: "In considering health effects of radiation emitted by nuclear power plants, it is exceedingly important to be quantitative and to keep the risks in perspective with other risks we accept. The health risks from nuclear power, while highly publicized in the media (and consequently having generated fear in the public), are inconsequential when compared to everyday risks such as cigarette smoking, alcohol consumption, driving automobiles, or flying in aircraft." To obtain a copy of the report, send a self-addressed, stamped (66 cents postage), business-size envelope to Radiation Report, ACSH, 47 Maple St., Summit, N.J. 07901.

- The 1988 edition of the "USP Drug Information" includes several new features. The Medicine Chart, a full-color 16-page tablet and capsule identification directory, has been added to both volumes. Volume I is divided into two books for easier handling. The publication is available from USP for \$115 for a one-year subscription and six bimonthly "Updates." Checks or money orders should be sent to USP Order Processing Department 561, 12601 Twinbrook Parkway, Rockville, Md. 20852 or call toll-free 1-800-227-USPC.

- Informative literature describes the M-7 SpeedClave, one of the fastest and most economical, self-contained steam sterilizers available. Requires no plumbing or special wiring. Specifications and safety features are included. For a copy, contact Ritter Medical Products, Midmark Corporation, Dept. PR, Versailles, Ohio 45380.

- Consulting Nutritionists in Private Practice, a practice group of the American Dietetic Association, has compiled state lists of registered dietitians. Also available is a list of nutrition resources produced independently by members of Consulting Nutri-



Dr. John D. MacDougall, ISMA president, displays the 1987 AMA membership award the Association received for exceeding its 1986 AMA membership. The plaque was presented Feb. 13 during the National Leadership Conference in Chicago. Flanking Dr. MacDougall are Dr. William S. Hotchkiss of Virginia (left), AMA president, and Dr. Alan R. Nelson of Utah, chairman of the AMA Board of Trustees.

tionists. To receive a free list of consulting nutritionists, send a business-size, self-addressed, stamped envelope to: Consulting Nutritionists, 9212 Delphi Road, S.W., Olympia, Wash. 98502.

- The American Society of Clinical Pathologists is now accepting entries for its annual medical photography competition. Contest categories are gross or macroscopic, microscopic and electron microscopic. Cash prizes will be awarded. The entry deadline is June 1. Entry forms are available from the ASCP, 2100 W. Harrison St., Chicago, Ill. 60612, Attn: Medical Photography Competition.

- The Joint Commission for Accreditation of Healthcare Organizations has a new publication. The title is "UPDATE." The first news to be spread far and wide is the news and the details of the Commission's "Agenda for Change." Vol. 1, No. 1 contains an announcement that of all the hospitals in the U.S. that volunteered to be the site for the Commission's development work, 17 hospitals, including St. Joseph of Mishawaka, have been chosen for

the task of "evaluation of various methods of gathering, analyzing, using, and transmitting indicator data and to explore modified on site survey processes in 1988." The publication is copyrighted but the first issue announces that the text may be duplicated and distributed for instructional purposes within hospitals. Any physician needing a copy may write to the Dept. of Corporate Relations, Joint Commission, 875 N. Michigan Ave., Ste. 2200, Chicago 60611.

- The National Institutes of Health has published a 44-page booklet on "Noninsulin-Dependent Diabetes." It is not copyrighted and may be duplicated for distribution. The booklet, Publication NIH 87-241, may be obtained by writing to National Diabetes Information Clearinghouse, Box NDIC, Bethesda, Md. 20892.

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

NEWS NOTES

Short Takes . . .

- The Neurological Society of Indiana has elected the following officers: Dr. Michael R. Burt, president; Dr. David C. Hall, vice-president; and Dr. John E. Kalsbeck, secretary-treasurer. They will serve two-year terms.

- Hal E. Broxmeyer, Ph.D., has been named scientific director of the Walther Oncology Center at the Indiana University Medical Center. The center, operated jointly by the Walther Medical Research Institute and the Indiana University School of Medicine, focuses on basic and clinical research of cancers. Broxmeyer is professor of medicine, microbiology and immunology at the I.U. School of Medicine.

- CHAMPUS (Civilian Health and Medical Program of the Uniformed Services) has expanded its coverage of in-home monitoring of the breathing and heart rates of infants who have life-threatening breathing complications. The benefits are effective for services and equipment provided on or after Dec. 4, 1987.

- A Ball State University assistant professor of psychological science says parents who educate their children about sex should know a lot about it themselves. "Parents themselves need to be knowledgeable about sex before

they can teach their children," said Michael R. Stevenson. "Otherwise, their children could be misinformed or unnecessarily and unreasonably frightened about sex." Stevenson said children should understand the basics of sexual behavior before they enter school.

- Prophylactic therapy with the antibiotics sulfamethoxazole and trimethoprim is effective in preventing *Pneumocystis carinii* pneumonia, a major cause of death in AIDS, according to an article in the February 25 issue of *JAMA*. The therapy also appeared to significantly improve the rate and length of survival for treated patients compared to a matched control group of patients. The report is from the University of Miami School of Medicine.

Here and There . . .

Dr. Sabahattin Bilgutay, medical director of Richmond State Hospital, was installed as president of the Association of State Medical Directors in January; Dr. Robert R. Migliorino of South Bend is vice-president and Dr. Lorenzo A. Eli is secretary.

Dr. Thomas C. Madden of Bloomington has been elected president of

Hoosiers for Safety Belts; he is president of the American College of Emergency Physicians, Indiana Chapter.

Dr. Thomas J. Parker of Lawrenceburg discussed "Living with Cancer" in January at the first "I Can Cope" session at Dearborn County Hospital.

Dr. Elizabeth L. Sowa of Evansville discussed the first woman doctor in the United States at the February "Books Between Bites" program sponsored by the University of Evansville. Dr. Sowa, a pediatric ophthalmologist, reviewed *Lone Woman: The Story of Elizabeth Blackwell, The First Woman Doctor* by Dorothy Clark Wilson.

Dr. Seth S. Philbrook, a LaPorte ophthalmologist, was the subject of an article in the January issue of *Kiwanis* magazine. The article focused on laser surgery.

Dr. James D. Chandler of Avilla has been named chief of staff for 1988 of McCray Memorial Hospital.

Dr. Eddie R. Apple, a Salem general practitioner, was honored during a dinner in February; the dinner was organized to give community residents an opportunity to recognize Dr. Apple, who has delivered more than 8,000 babies, and to raise funds for the American Heart Association, Washington County Division.

Dr. Richard W. Wagner, a family practitioner from Huntington, has been

Physician Recognition Awards



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



Adlard, John M., Dyer
Ahuja, Girdhar L., Beech Grove
Babcoke, Gary A., Chesterton
Buchman, Marshall H., New Albany
Choslovsky, Sydney, Gary
Curran, William L. Jr., Jasper
Deardorff, Dale D., Mishawaka

Del Giudice, Joseph, Jasper
Gluek, Louis A., Munster
Griffin, Charles G., Valparaiso
Halcomb, F.J. III, Warsaw
Lohmuller, Herbert W., Bluffton
Martino, Robert S., Merrillville

Palmer, Robert M., Indianapolis
Reinshagen, Jerald A., Rockport
Roach, Eugene G., Anderson
Sides, Gregory D., Danville
Stewart, John C., Kokomo
Swanson, Richard T., Evansville
Wenzler, Paul J., Bloomington

elected chief of staff at Huntington Memorial Hospital; **Dr. Piyush J. Shah**, a Huntington pediatrician, is the new secretary.

Dr. Harry R. Stimson, a South Bend family practitioner, has been re-elected president of the medical staff at St. Joseph's Medical Center for 1988; **Dr. Daniel W. Kletzing**, a South Bend otorhinolaryngologist, was re-elected vice-president, and **Dr. Jan C. Green**, a South Bend urologist, was re-elected secretary-treasurer.

Dr. Vikram M. Patel, an Indianapolis psychiatrist, has been elected president of CPC Valle Vista Hospital in Greenwood; **Dr. George J. McAfee**, a child psychiatrist from Indianapolis, is the vice-president, and **Dr. Douglas K. Bullington**, a Franklin family practitioner, is the secretary-treasurer.

Dr. Douglas E. Sawyer, a Warsaw family practitioner, was the general chairman of the Kosciusko Community YMCA membership campaign, conducted from Feb. 17 through March 16; **Dr. Sawyer** is a member of the Kosciusko Community YMCA board of directors.

Dr. John K. Dyer, a Fort Wayne nephrologist, spoke on "Kidney Involvement in Lupus" at a February meeting of the Lupus Foundation of America, Fort Wayne Satellite, North-east Indiana Chapter.

Dr. Randall A. Lee, a Martinsville internist, discussed hypertension at a February program on "High Blood Pressure Control" at Morgan County Memorial Hospital.

Dr. Joseph A. Beardsley, an obstetrician and gynecologist from Franklin, was among speakers at a February workshop on AIDS in the workplace; the Johnson County Health Foundation and Johnson County Memorial Hospital sponsored the conference.

Dr. Jean T. Stoops of Wabash retired Feb. 1 after 42 years as a family practitioner. He is a graduate of DePauw University and the Indiana University School of Medicine. Before opening his practice in Wabash in 1946, he served with the U.S. Army in Europe.

Dr. John B. White Jr., an Indianapolis orthopedic surgeon, has been elected president of the medical staff of Com-

munity Hospital Indianapolis; **Dr. Russell L. Judd** is vice-president, and **Dr. Hany Haddad** is secretary-treasurer.

Dr. Dean D. Maglinte of Indianapolis served on the faculty of a categorical course on small bowel diseases during the annual meeting of the Society of Gastrointestinal Radiologists in January in Nassau, Bahamas; he spoke on the status of enteroclysis in North America in 1988.

Dr. Andrew R. Jones of Bloomington recently was inducted as a fellow of the American Academy of Orthopaedic Surgeons.

Dr. James T. Anderson of Greenfield is a new member of the International Academy of Proctology; he was appointed after attending a laser surgery seminar at Kendrick Memorial Hospital in Mooresville.

Dr. Paul Siebenmorgen of Terre Haute recently was named runner-up in the national Family Doctor of the Year Competition for 1987-88. He has practiced family medicine in Terre Haute since 1947 and is second in a line of three generations of physicians. The award was presented by the American Academy of Family Physicians.

Dr. Truman E. Caylor of Bluffton was named the 1988 Citizen of the Year by the Bluffton Chamber of Commerce during a January dinner meeting; **Dr. Caylor**, who retired in 1980 at the age of 80, helped develop the Caylor-Nickel Medical Center in Bluffton, which was founded by his father, the late **Dr. Charles E. Caylor**.

Dr. Randolph W. Lievertz of Indianapolis delivered the keynote address at the annual seminar of the 8th District Academy of Osteopathic Medicine and Surgery, held in February in Akron, Ohio; his topic was "Management of the Climacteric." Also in February, he addressed the Huntington County Medical Society in Roanoke on the latest updates in the treatment of the complications of menopause and was interviewed on WTLC Radio about influenza and sore throats. In January he spoke on the current evaluation and therapy of menopause during a meeting of the Hancock County Medical Society.

Dr. Michael D. Bishop of Bloomington has been elected to the board of directors of the American Board of Emergency Medicine; his term will begin in June.

Dr. Ronald Hamaker of Indianapolis was the guest speaker for the February meeting of the Michigan Otolaryngological Society in Detroit; his lecture was entitled "Intraoperative Radiation in Head and Neck Cancer."

Dr. Philip N. Eskew of Carmel discussed "Menopause and the Uses of Estrogen" in March at St. Vincent Carmel Hospital.

Dr. Patricia I. Bader of Fort Wayne discussed genetic counseling during a February meeting sponsored by the East Allen County Schools Parent Advisory Committee.

Dr. Timothy P. Beeson of Greenfield spoke at a "Crossroads of Life" program sponsored by the Jerricho Road Singles in Indianapolis.

Dr. Robert A. Ward of Tell City was named to the Perry County Health Board in February by the county commissioners.

Hoffman-La Roche Urges Fight Against Drug Abuse

Irwin Lerner, president of Hoffmann-La Roche, Inc., has written letters to the CEOs of the Fortune 1000 companies urging them to take action against drug abuse in the workplace.

In his letters, Lerner cited President Reagan's call, in his State of the Union address, for a "renewed commitment" against the use of illicit drugs.

Lerner said Hoffmann-La Roche would act as a catalyst to bring together other companies to examine issues of drug abuse in the workplace. Multi-company task forces then would develop guidelines for management and union leadership "to take action in addressing drug abuse issues in their own organizations." The recommendations would be presented at a one-day national conference to be held this spring.

NEWS NOTES

New ISMA Members

Jameel Audeh, M.D., Kokomo, oncology.

Radha R. Bathina, M.D., Fort Wayne, family practice.

James M. Brantly, M.D., Fort Wayne, emergency medicine.

Craig A. Bugno, M.D., Fulton, family practice.

Peter Chant, M.D., Crown Point, anesthesiology.

Michael A. Clark, M.D., Indianapolis, forensic pathology.

Elliot H. Cousins, M.D., Indianapolis, vascular surgery.

Barry J. Crevey, M.D., Beech Grove, cardiovascular diseases.

Gary W. Dupre, M.D., Lafayette, internal medicine.

Dennis G. Egnatz, M.D., Elkhart, occupational medicine.

Emad Foroohar, M.D., Oak Brook, Ill., general surgery.

James M. Gaither, M.D., Mooresville, pulmonary diseases.

David A. Halperin, M.D., South Bend, emergency medicine.

John J. Haskin Jr., M.D., South Bend, psychiatry.

Mary H. Heintz, M.D., Fort Wayne, cardiovascular diseases.

Steven L. Hossler, M.D., Decatur, diagnostic radiology.

Scott W. Hoyer, M.D., Lafayette, neurology.

Bruce C. Hubert, M.D., Schererville, general surgery.

Diane B. Humenansky, M.D., South Bend, psychiatry.

Thomas A. Kampner, M.D., Crete, Ill., general practice.

Nadine E. Keer, M.D., Munster, general practice.

Diane D. Mergo, M.D., Homewood, Ill., general practice.

David C. Miller, M.D., LaPorte, anesthesiology.

Lovera W. Miller, M.D., LaPorte, obstetrics and gynecology.

Prasit Nimityongskul, M.D., Munster, orthopedic surgery.

Charles M. O'Brien, M.D., Terre Haute, cardiovascular diseases.

Thomas P. O'Connor, M.D., Indianapolis, therapeutic radiology.

Christopher J. Peers, M.D., Goshen, head and neck surgery.

Sergio Pisterman, M.D., Louisville, Ky., emergency medicine.

Debra A. Reinking, M.D., Indianapolis, anesthesiology.

Robert D. Rosenbaum, M.D., Kokomo, internal medicine.

Paul S. Rosenberg, M.D., Madison, orthopedic surgery.

Richard A. Selo, M.D., Lafayette, urological surgery.

Keith H. Sherry, M.D., Mishawaka, emergency medicine.

Cheryl A. Wibbens, M.D., South Bend, emergency medicine.

Ralph F. Winkler, M.D., Indianapolis, anatomic and clinical pathology.

Residents:

C. William Allen, M.D., Indianapolis, obstetrics and gynecology.

Kenneth C. Anderson, M.D., Louisville, Ky., family practice.

Nancy K. Deaton, M.D., South Bend, family practice.

Jackie L. Evans, M.D., Indianapolis, family practice.

James N. Gingerich, M.D., Beech Grove, family practice.

Janet Kelley, M.D., Evansville, family practice.

Bette G. Maybury, M.D., Indianapolis, neurology.

Susan R. Moriarty, M.D., Indianapolis, infectious diseases.

To The Indiana Medical Foundation:

I am enclosing a gift herewith to honor giants in our profession, their memories and their survivors.

Please record this gift to the memory of the following:

- Dean John VanNuys
- John B. Hickam
- Pasquale D. Genevese
- E. Rogers Smith
- Joseph Finneran
- J. Melvin Masters
- Marlow Manion
- J. Neill Garber
- Harris B Shumacker
- Richard T. Nolin
- Duke Baker
- Frank Enderle

Most of these stellar physicians were my teachers and my friends, like fathers to me. A few contemporaries like Drs. Nolin, Baker and Enderle were fellow students and cherished friends—and like sons to me. Dr. Shumacker is a retired head of the Department of Surgery at Indiana University School of Medicine and is now a consultant.

How very much these very special people, much and always beloved, have contributed to our profession, our world and the future.

We adore these men who are the finest and best examples for men and for mankind. Still—and forever, these men continue to teach us and make us examine our consciences.

Daniel L. Boyd, M.D.

1987 MEMBERSHIP REPORT

December 31, 1987

County	1st					Totals
	Active	Year Resident	Senior	Inactive	Hardship	
Adams	11		3			14
Bartholomew-Brown	74	1	7	5	1	88
Benton	3		1			4
Boone	19	1	5	1		26
Carroll	9		3			12
Cass	36	1	7	1	1	46
Clark	89	2	3	2		96
Clay	10		1		1	12
Clinton	10	1	5			16
Daviess-Martin	15		5	2		22
Dearborn-Ohio	27		2			29
Decatur	9		3			12
DeKalb	15		2	1	1	19
Delaware-Blackford	135	4	2	14	6	161
Dubois	35	1	1	4		41
Elkhart	120	6	2	19	8	155
Fayette-Franklin	20	2	3	1		26
Floyd	68	2	3	2	1	76
Ft. Wayne-Allen	371	12	30	50	18	485
Fountain-Warren	8		3			11
Fulton	7					7
Gibson	8		2	1		11
Grant	70	3	1	17	4	96
Greene	10	1	6			17
Hamilton	32	3	1			36
Hancock	27	1	1	1	1	31
Harrison-Crawford	11	1				12
Hendricks	34	1	2		1	38
Henry	34	1	4	1	1	41
Howard	86	2	9	6	1	104
Huntington	17		3	1		21
Indianapolis-Marion	1430	44	56	181	51	1786
Jackson	20	2	3			25
Jennings	4		1			5
Jasper	9		2		1	12
Jay	16		1			17
Jefferson-Switzerland	31	1	5	2		39
Johnson	37	1	4			42
Knox	48		1	9	1	59
Kosciusko	28	3		1		32
LaGrange	9		1	1		11
Lake	572	7	1	65	17	665
LaPorte	102	2	12	3		119

County	1st					Total
	Active	Year Resident	Senior	Inactive	Hardship	
Lawrence	42		1	1	1	45
Madison	110	4	20	9	1	144
Marshall	22	1	1	1		25
Miami	16		2			18
Montgomery	25		1	2	1	29
Morgan	12		5	1		18
Newton	3		2			5
Noble	14			1		15
Orange	4		2			6
Owen-Monroe	129	2	1	15	4	151
Parke-Vermillion	8		3	2		13
Perry	6		1			7
Pike	1					1
Porter	105		6	5		116
Posey	3		2			5
Pulaski	6		1			7
Putnam	13	1	1	2		17
Randolph	9		2	2	2	15
Ripley	10	3				13
Rush	7		4	2		13
St. Joseph	254	1	2	49	12	323
Scott	6		2			8
Shelby	16	2	2	1		21
Spencer	2		1			3
Starke	7		1			8
Steuben	11	1	2	4	1	21
Sullivan	7		4	1		12
Tippecanoe	172	3	28	7	1	211
Tipton	7		4		1	12
Vanderburgh	329	10	4	51	10	406
Vigo	133	3	19	7	2	164
Wabash	27		2			29
Warrick	12		1			13
Washington	7		1			8
Wayne-Union	79	3	15	2		99
Wells	51	2	7	2	4	66
White	5		4			9
Whitley	8		2		1	11
RMS		319				319
1987 TOTALS	5404	142	423	739	211	6983
1986 TOTALS	5183	162	326			
1987 Gain	+221	-20	+97			
Overall gain of 298 paid members over 1986						

THE INDIANA STATE MEDICAL ASSOCIATION

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*John D. MacDougall, Beech Grove
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 Shirley T. Khalouf, Marion
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 Max Wesemann, Franklin
 Michael O. Mellinger, LaGrange
 William C. VanNess II, Summitville
 Benny Ko, Terre Haute
 C. Dyke Egnatz, Schererville
 William H. Beeson, Indianapolis

TRUSTEES (Terms end in October)

District

- 1—E. DeVerre Gourieux, Evansville (1989)
 - 2—Paul J. Wenzler, Bloomington (1990)
 - 3—Thomas A. Neathamer, Jeffersonville (1988)
 - 4—William E. Cooper, Columbus (1989)
 - 5—Benny Ko, Terre Haute (1990)
 - 6—Clarence G. Clarkson, Richmond (1988)
 - 7—Donna J. Meade, Indianapolis (1989)
 - 7—John M. Records, Franklin (1990)
 - 8—Wm. C. VanNess II, Summitville (1990)
 - 9—Max N. Hoffman, Covington (1988)
 - 10—Nicholas L. Polite, Hammond (1989)
 - 11—Jack W. Higgins, Kokomo (1990)
 - *12—Michael O. Mellinger, LaGrange (1988)
 - 13—Steven M. Yoder, Goshen (1989)
- RMS—Michael A. Williams, Indianapolis (1988)

*Chairman

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District

- 1—Bruce W. Romick, Evansville (1988)
 - 2—Jerome E. Melchior, Vincennes (1989)
 - 3—Gordon L. Gutmann, Jeffersonville (1989)
 - 4—George L. Alcorn, Madison (1988)
 - 5—Fred E. Haggerty, Greencastle (1988)
 - 6—Ray A. Haas, Greenfield (1989)
 - 7—Vacant
 - 7—Peter L. Winters, Indianapolis (1988)
 - 8—Douglas A. Triplett, Muncie (1988)
 - 9—R. Adrian Lanning, Noblesville (1989)
 - 10—Frank M. Sturdevant, Valparaiso (1988)
 - 11—Laurence K. Musselman, Marion (1989)
 - 12—Thomas A. Felger, Fort Wayne (1989)
 - 13—Alfred C. Cox, South Bend (1988)
- RMS—Bob Darroca, Indianapolis (1988)

AMA DELEGATES (Terms end Dec. 31)

Everett E. Bickers, Floyds Knobs (1988)
 Alvin J. Haley, Indianapolis (1988)
 John A. Knot, Lafayette (1988)
 Marvin E. Priddy, Fort Wayne (1989)
 Peter R. Petrich, Attica (1989)
 Thomas C. Tyrrell, Hammond (1989)

AMA ALT. DELEGATES (Terms end Dec. 31)

Robert M. Seibel, Nashville (1988)
 Edward L. Langston, Flora (1988)
 George T. Lukemeyer, Indianapolis (1988)
 Herbert C. Khalouf, Marion (1989)
 Martin J. O'Neill, Valparaiso (1989)
 Richard L. Reedy, Yorktown (1989)

DISTRICT OFFICERS AND MEETINGS

- 1—Pres: Syed A. Ali, Boonville
 Secy: Alan H. Johnson, Evansville
 Annual Meeting; May 5, 1988
- 2—Pres: Charles E. Hendrix, Vincennes
 Secy: Jerome E. Melchior, Vincennes
 Annual Meeting; May 20, 1988
- 3—Pres: Kenneth Wilson, Palmyra
 Secy: Wilfred Brockman, Corydon
 Annual Meeting; May 13, 1988
- 4—Pres: Ricardo C. Domingo, Greensburg
 Secy: Corazon Gregorio, Greensburg
 Annual Meeting; May 4, 1988
- 5—Pres: Mark F. Conway, Greencastle
 Secy: Peggy Sankey-Swaim, Rockville
 Annual Meeting; Sept. 22, 1988
- 6—Pres: William A. Nesbitt, Connersville
 Secy: Daniel P. Rains, New Castle
 Annual Meeting; May 11, 1988
- 7—Pres: Peter L. Winters, Indianapolis
 Secy: H. Marshall Trusler, Indianapolis
 Annual Meeting;
- 8—Pres: Joseph C. Copeland, Anderson
 Secy: Kenneth A. Shaver, Anderson
 Annual Meeting; June 2, 1988
- 9—Pres: Dallas E. Coate, Lebanon
 Secy: Max N. Hoffman, Covington
 Annual Meeting; June 8, 1988
- 10—Pres: Surjit S. Patheja, Valparaiso
 Secy: Barron M. Palmer, Hammond
 Annual Meeting; Sept. 28, 1988
- 11—Pres: Brian L. Doggett, Delphi
 Secy: Fred C. Poehler, LaFontaine
 Annual Meeting; Sept. 20, 1988
- 12—Pres: Thomas D. Smith III, New Haven
 Secy: William J. Aeschliman, Fort Wayne
 Annual Meeting; Sept. 15, 1988, Fort Wayne
- 13—Pres: Jon B. Kubley, Plymouth
 Secy: Thomas J. Eberts, South Bend
 Annual Meeting; Sept. 13, 1988

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 Alfred C. Cox, South Bend
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 G. Beach Gattman, Elkhart
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CUTANEOUS MEDICINE

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Making the Decision to Hire or Promote

by Arthur R. Pell, Ph.D.

Consultant, Dale Carnegie & Associates, Inc.

"I pride myself on my ability to judge people." How often have you heard this statement? Yet, when asked on what basis they make this judgment, the reason often is superficial:

- "He had a firm handshake."
- "She looked me straight in the eye."
- "He went to the same college I did."
- "She comes from a fine family."

When hiring or considering somebody for promotion, people must be judged on much more substantial bases than these. Let's look at some of the more common fallacies that result in misjudgment of individuals.

Overemphasis on appearance.

Barbara is an extremely attractive young woman. Over the past five years, she has had four jobs as a sales representative . . . and has failed in all four. The sales managers were so impressed by Barbara's good looks, they assumed she would make an immediate favorable impression on prospects and become a successful salesperson. However, Barbara had little else to offer. She had been so accustomed to getting by on her appearance that she had never had to work very hard.

Do not interpret this to mean that appearance is not a factor to be considered. Many attractive people also have the skill, drive and capability to do a good job. Because many of us tend to put more emphasis than we should on appearance, we should look more deeply into all the aspects of a particularly attractive person's background before making a decision.

We favor people like ourselves.

Tom's staff were all alumni of his university. Even though Beth worked in Chicago, her assistant and secretary were both from Iowa, her home state. When Tom and Beth were questioned on why they selected these people, their responses included comments on job qualifications, personality traits and intelligence, but neither manager considered the similarity of backgrounds as being a factor.

One tends to subconsciously favor people whose backgrounds are close to one's own. There is a comfortable feeling when dealing with people who have shared a similar environment or experience. This could be an asset in that working relationships can be developed more rapidly and more easily. However, it may lead to choosing a less qualified candidate. When all the people in a work group have analogous backgrounds, there is an inclination for them to think much alike and therefore, have less exposure to new ideas.

Watch for the "halo effect."

Rob is a computer wizard. Give him any type of problem that can be solved by a computer and he will develop a program to solve it. His bosses were so impressed with this capability that they promoted Rob to a position which required making decisions that could not be solved by computer. They assumed that, because he was so good in one area, he must be good in all areas.

The opposite is the "pitchfork effect." The person involved has one negative characteristic that so dominates our evaluation of that person that we do not see his or her good points.

To avoid the prejudice of halo or pitchfork effects or other narrow approaches of evaluation, we should look at the whole person instead of at disparate traits.

Look for success records.

"What is past is prologue." In selecting people for a new job, whether it be a promotion from within or hiring from the outside, the most significant factor is their past record. Successful people tend to continue to be successful. People with mediocre records tend to repeat their mediocrity.

By evaluating what that person has accomplished in previous jobs or assignments, we can get a graphic picture of what they may do in the new situation. To determine and evaluate success patterns, ask applicants what they consider to be their major contributions in their previous jobs. When Lee applied for a sales job, he had no specific experience, but his record of success in his previous administrative job showed that he could face and solve complex problems in a variety of areas. The Sales Manager recognized that this was a major asset in selling and selected Lee rather than some of the experienced salespeople who were competing for the job. Within a few months, Lee proved that his pattern of success carried over into this new position and was on his way to becoming one of the best salespeople on the staff.

The way a person perceives the job also tells much about the candidate. Betty was the office manager of her company. Her major achievement was to keep the work flowing, putting out fires and assuring that each assignment was completed on time and accurately. That is good — if you want a "maintenance" type individual, one who can maintain operations as they are. However, if you need innovation or creativity, it would be better to seek someone who has introduced new systems which improved productivity or had reorganized a department to make it more efficient.

The accomplishments of which the applicant is proud also give more insight into his or her thinking about the nature of the work. In answer to the question of achievement, Gary, a candidate for a personnel executive position, proudly described how he created a bowling league and softball tournament for his company. His competitor for the position, Eileen, explained how she introduced a suggestion program which resulted in several cost saving innovations. On the basis of these responses, which one would you hire?

Attitudes and Philosophy.

When Lou was being considered for promotion to a supervisory position, he was asked about his philosophy of supervising others. He pointed out that he had been a sergeant in the Marine Corps and believed in being "tough but fair." Further questions elicited that his philosophy of management was quite different from the more participative approach the company favored. His military experience still dominated his philosophy of supervision despite the leadership style under which he had been working in the company.

Whether you are considering a current employee for promotion or are hiring somebody from outside the company, it is imperative that every step be taken to assure that the right decision is made. Be alert to the dangers of personal likes and dislikes, overemphasis on appearance and the halo or pitchfork effects. Look for a pattern of success in the past, a positive attitude toward the job and a philosophy of management that is congruent with that of the company.

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OBITUARIES

Joseph R. Hopkins, M.D.

Dr. Hopkins, 65, a retired Edinburgh physician, died Feb. 15.

He was a 1946 graduate of the University of Louisville Medical School and was a Navy veteran of World War II and the Korean War. He retired in 1974.

Dr. Hopkins had been a physician for the Job Corps at Camp Atterbury and for the Marion County Home (now called the Marion County Healthcare Center).

Wayne T. Cox, M.D.

Dr. Cox, 85, a retired general practitioner, died Jan. 9.

He was a 1926 graduate of the University of Louisville Medical School and served in the Army Medical Corps during World War II.

Dr. Cox, a general practitioner in Lafayette before retiring in 1959, was a charter member of the Lafayette Academy of Medicine.

Chris W. Cullnane, M.D.

Dr. Cullnane, 81, a retired Evansville physician, died Feb. 8 at his home.

He was a 1931 graduate of Indiana University School of Medicine. He retired in 1979.

Dr. Cullnane was a 50-year member of the Indiana University Medical Alumni Association.

Stanley G. Zallen, M.D.

Dr. Zallen, 77, a retired East Chicago physician, died Feb. 13.

He was a 1939 graduate of Loyola University Stritch School of Medicine.

Dr. Zallen, who retired five years ago, had been affiliated with St. Catherine Hospital.

William B. Sigmund, M.D.

Dr. Sigmund, 80, a retired Columbus physician, died Jan. 25, 1987.

He was a 1933 graduate of the University of Louisville Medical School.

Dr. Sigmund was a member of the American Urological Association.

Elmer T. Cure, M.D.

Dr. Cure, 87, a retired Muncie general practitioner, died Jan. 26 at his home.

He was a 1924 graduate of Indiana University School of Medicine. After graduation, he served as an officer with the Navy Medical Corps and was stationed for a year in Port au Prince, Haiti. He retired in 1971.

Dr. Cure, who practiced in Muncie 45 years, was a member of the American Academy of Family Physicians and the ISMA Fifty Year Club. He was an honorary medical staff member of Ball Memorial Hospital.

Roger F. Whitcomb, M.D.

Dr. Whitcomb, 80, a Shelbyville physician since 1947, died Feb. 9.

He was a 1942 graduate of Indiana University School of Medicine and an Army-Air Forces veteran of World War II.

Dr. Whitcomb was a former president of the Shelby County Medical Society and a former Shelby County coroner. He had also served as medical adviser to the Shelbyville High School Athletic Department.

Richard K. Parrish, M.D.

Dr. Parrish, 73, a retired Decatur ophthalmologist, died Jan. 4 at Adams County Memorial Hospital.

He was a 1941 graduate of Indiana University School of Medicine and was a Navy veteran of World War II. He retired in 1985.

Dr. Parrish was a member of the American Society of Abdominal Surgeons, the American Academy of Ophthalmology and the American College of Surgeons. He was certified by the American Board of Ophthalmology.

Stephen L. Johnson, M.D.

Dr. Johnson, 79, a retired Evansville physician, died Feb. 20 at Regina Continuing Care Center in Evansville.

He was a 1933 graduate of the Indiana University School of Medicine and served in the Army Medical Corps during World War II.

Dr. Johnson was a member of the American College of Physicians, the American Society of Internal Medicine, the American Diabetes Association and the American College of Chest Physicians. He was certified by the American Board of Internal Medicine.

Memorials: Indiana Medical Foundation

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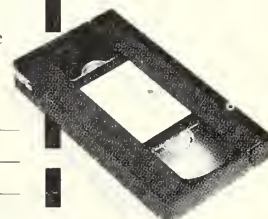
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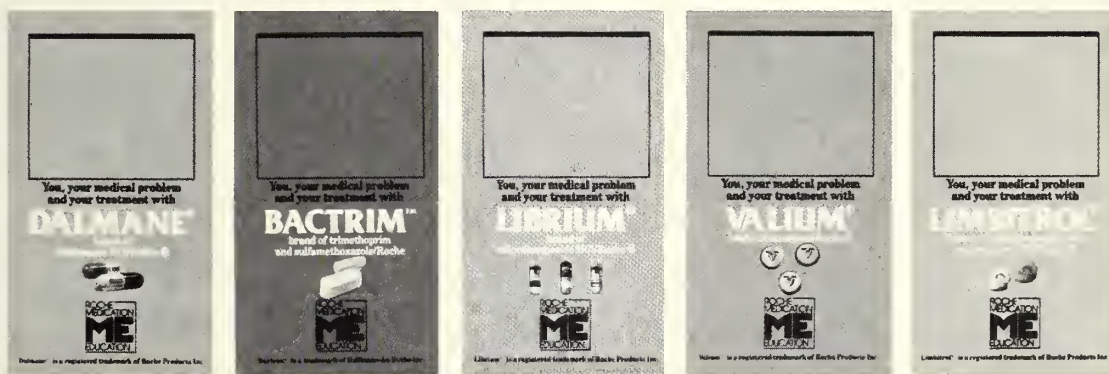


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USPS 284-440
ISSN 0746-8288

POSTMASTER: Send address changes to Indiana State Medical Association, c/o Membership Department, 3935 N. Meridian St., Indianapolis, Ind. 46208.

INDIANA MEDICINE is published monthly by the Indiana State Medical Association. Second-class postage paid at Indianapolis, Ind.

Address correspondence relating to editorial material, advertising or subscriptions to: INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis, Ind. 46208. Phone (317) 925-7545.

Annual subscription rates: \$20 domestic, \$22 Canada, \$23 foreign. Medical library rates: \$18 domestic, \$20 Canada, \$21 foreign. Full-time Indiana medical students—\$10. Single copies not available. Subscriptions are renewable annually.

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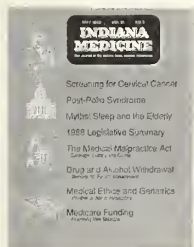
Rodney A. Mannion, M.D.

Alan T. Marty, M.D.

W.D. Snively Jr., M.D.

ABOUT THE COVER

As you can see, this issue of INDIANA MEDICINE contains something of interest for almost everyone. If you especially like or dislike any particular article, we invite you to drop us a line. Our mailing address appears about three inches above.—COVER BY FRED KINGHORN



A white line drawing of a stethoscope on a black background. The stethoscope's tubing forms a large, stylized letter 'S' that frames the word 'STETHOSCOPE' in large, white, bold, sans-serif capital letters. The tubing continues from the bottom of the 'S' and loops around the word 'EXAMINING' and 'STATE & NATIONAL MEDICAL ISSUES' which are stacked vertically in smaller, white, bold, sans-serif capital letters to the right of the main title.

STETHOSCOPE

EXAMINING STATE & NATIONAL MEDICAL ISSUES

The American Medical Association and the Health Care Financing Administration have begun meeting to develop a Medicare carrier-physician education program. The AMA proposed the program to improve physician understanding of the Medicare carrier medical review process and policies. Many problems resulted from the implementation of the "medically unnecessary" provision and refund letters.

HCFA said it will revise the wording of present refund letters that are offensively worded because the original form's use of the phrase "may be denied" was not an acceptable communication to the patient. HCFA notified carriers the form must clearly state that a particular service is either "not covered" or "the physician believes the service is not covered." Notice of the ruling was sent to all Medicare providers in the March 1988 Medicare B Bulletin with a copy of the proposed "acknowledgment of noncovered services" form.

The ISMA has adapted the form it previously offered to member physicians for their use in complying with the Medicare "unnecessary" or "noncovered" regulation. A copy of the redesignated form will be mailed with the May issue of ISMA Reports and is suitable for photocopying. Additional forms are available by calling the ISMA Public Relations Department, 1-800-382-1721 or 317-925-7545.

Two bills to provide catastrophic illness coverage for Medicare patients have been introduced in Congress. Although the AMA supports Medicare catastrophic coverage benefits, it opposes the Senate version of the bill, which contains a drug benefit provision that would give the Secretary of Health and Human Services the authority to determine how outpatient drugs would be prescribed, dispensed or utilized.

ISMA urged its members to let their senators know of their opposition to the Senate bill. John MacDougall, M.D., president of the ISMA, wrote a letter to Indiana Senators Richard G. Lugar and Dan Quayle expressing the concerns of the ISMA.

The Relative Value Scale (RVS) study being conducted by Harvard University could result in a more acceptable Medicare reimbursement system, according to the AMA, but the AMA will wait until the final report before taking a position on RVS. The study, mandated by Congress, includes the analysis of resource costs of the services provided by 17 major specialties and sub-specialties that account for substantial Medicare reimbursement to physicians.

The study must be delivered to the HHS Secretary July 14 and sent to the Physician Payment Review Commission (PPRC) within 30 days. January 1990 is the earliest that Congress could implement any RVS payment mechanism. Although Congress is committed to changing the present reimbursement system, it has not decided if it will take the RVS approach.

IN INDIANA. . .

John MacDougall, M.D., ISMA president, and representatives of the Indiana Federation of Older Hoosiers agreed during a March 23 meeting to begin studying two issues of common concern. Dr. MacDougall met with Raymond Gray, Federation president; Harry Thompson, house speaker of the Older Hoosiers Assembly; and Genevieve Riley, Federation executive director.

Dr. MacDougall expressed ISMA's concern about mandatory assignment and explained a courtesy card program used in other states to help older persons find physicians who accept assignment.

The AMA's "Proposal for Financing Health Care of the Elderly" was also discussed. The AMA plan was proposed in 1986 as an alternative to Medicare. Federation representatives agreed to study the proposal and discuss their concerns and suggestions with ISMA at a later date.

Amphetamine use for weight control will continue to be restricted under new rules approved by the Indiana Medical Licensing Board. The proposal will ban Schedule II amphetamines for weight control. It also limits the use for weight loss of Schedules III and IV controlled substances to three separate nonrefillable 30-day prescriptions in a 365-day period. Each separate 30-day prescription must be preceded by a physical examination by the physician. The governor is expected to sign the rules.

ISMA's Board of Trustees voted to oppose a triplicate prescription program for Indiana. The program could become effective by the end of 1988.

Michael O. Mellinger, M.D., chairman of the board of trustees, in a letter to Governor Robert Orr, members of the Prescription Abuse Study Committee and the Controlled Substances Advisory Committee, said: "The board believes that the preferable approach would be one that entails an exhaustive review of inter-professional and inter-governmental programs that address Indiana's prescription drug abuse problems and that provide to the greatest extent possible the least amount of intrusion into the practice of medicine."

Legislation passed this year which was vetoed by the governor would have delayed the implementation of a triplicate prescription program until July 1989.

Indiana laws concerning the length of time physicians must maintain medical records will change effective July 1, 1988. Under HEA 1055, physicians and other health care providers must keep health records for at least seven years.

Physicians must retain x-rays and mammograms for five years. Physicians must notify patients in writing or by posting a notice of the time limit for retaining x-rays when the procedure is performed. Written notification of the time limit for maintaining mammograms must be provided to patients when the test is given.

Physicians also must inform patients that within the five years they can obtain a copy of the x-ray or mammogram at cost. After the five-year deadline, patients have 30 days to obtain the mammogram. Doctors may destroy the mammogram if it is not claimed within that time.

ISMA has printed a flyer with the notification requirements. Copies are available from the ISMA Public Relations Department.

MEDICAL MUSEUM NOTES



CHARLES A. BONSETT, M.D., Indianapolis

KATE MILNER RABB, a reporter for *The Indianapolis Star* during the 1920s and 1930s, wrote a column entitled "A Hoosier Listening Post." She was interested in nature, Indiana and Indiana history. Because of these interests, she became acquainted with Dr. Frank B. Wynn, who was president of the Nature Study Club of Indiana in 1922. Mrs. Rabb, herself a charter member and secretary of the club, frequently wrote about the organization in her columns.

On June 26, 1922, Dr. Wynn organized the Indiana Lincoln Memorial Association. Mrs. Rabb described its formation in her column and also, 10 years later, in the *Year Book* of the Nature Study Club for 1932.

A month and a day after this June 26 organizational meeting, Dr. Wynn lost his life while climbing Mt. Siyeh in Glacier National Park. Dr. Wynn's death undoubtedly delayed the realization of the memorial. The enthusiasm to complete the memorial by private subscription was lost.

Mrs. Rabb's account is abbreviated as follows:

"On June 25, 1922, a party composed of some members of the Nature Study Club of Indiana, the Indiana Sons of the American Revolution, Daughters of the American Revolution, and two representatives of the Indiana Historical Commission (Dr. Frank Wynn, who was also president of the Commission, and Dr. John Oliver) went down to Jeffersonville, Indiana, to attend the unveiling ... of a marker on the site of George Rogers Clark's home at Clarksville, Indiana.

"At the close of the ceremony (12 persons) drove to Hodgenville, Kentucky, to visit the birthplace of Abraham Lincoln. ...

"On the train, on the way to Jeffersonville, Dr. Wynn seemed in unusual spirits, and presently he confided in me that he had a most interesting plan which he intended to lay before the pilgrims on their arrival to Hodgenville. After a while he showed me a

Indiana Historical Commission
STATE HOUSE
INDIANAPOLIS, INDIANA

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PRESIDENT
SAMUEL M. FOSTER
VICE PRESIDENT
HARLOW LINDLEY
SECRETARY
JAMES A. WOODBURN

GOV. WARREN T. MCCRAY
CHARLES W. MOORES
MATTHEW J. WALSH
CHARITY DYE
LEWIS O. BANNON

JOHN W. OLIVER, DIRECTOR
LUCY M. ELLIOTT, ASSISTANT

June 25th
1922

RESOLUTIONS

ORGANIZING THE INDIANA LINCOLN MEMORIAL ASSOCIATION

In this solemn historic presence, we the undersigned residents of the State of Indiana here assembled recognize in this splendid Memorial a fitting tribute to the birth-place of Abraham Lincoln--probably the greatest of American Presidents. As Kentucky was his birth-place so was Indiana the residence of his youth. As such, we as loyal citizens of the Hoosier Commonwealth, owe it to our historic conscience as well as State pride to adequately memorialize the site where in the moulding period of life the foundations were laid for the character, wisdom and patriotism of his mature years. In the furtherance of this end we this day, upon the ground made sacred by his birth organize ourselves into the Indiana Lincoln Memorial Association. We pledge ourselves not to rest in the prosecution of this movement until the full realization of a splendid memorial shrine is builded commemorative of the youth of Lincoln, spent upon Indiana soil.

In furtherance of this historic enterprise it is moved that a Committee be appointed to draft a Constitution and By-laws, and make recommendations to a subsequent meeting upon the best course to pursue.

Frank B. Wynn *Edna B. Gerdhart*
Kate Milner Rabb *Paul L. Armstrong*
Mary Lucy Campbell *Urban K. Lowere*
Martha C. Ruhl *Jennish B. Cohen*
John W. Oliver *Eugene C. Foster*
Lucy M. Elliott *Harry Ashmun Woodburn*

resolution which he had drawn up for the organization of a body which should erect a suitable memorial to Abraham Lincoln in the state in which he had grown from boyhood to young manhood, and together we talked at length over the possibilities of such a plan as he had outlined. ...

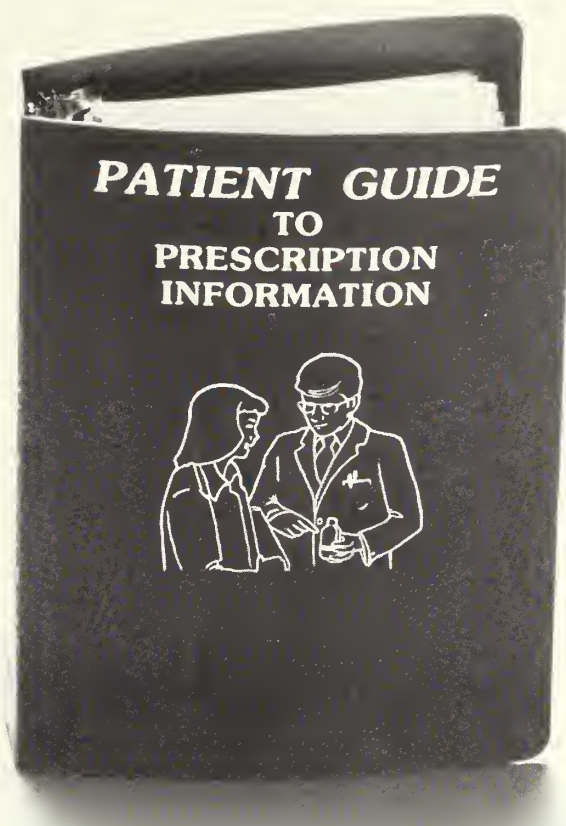
"The party of 12 made the trip from Jeffersonville in two motor cars for the

occasion. We left Jeffersonville in the late afternoon. ... It was still daylight when we drove into Elizabethtown. ... It was only nine-thirty when the party registered at the Hodgenville, Kentucky, hotel."

The next morning the group was at the memorial to Lincoln's birth.

"Reverently, we went within to read

CONTINUED ON PAGE 418



This book about drugs is different... it's written in English

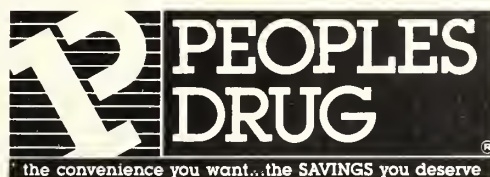
Patients often have questions about their prescription drugs, even after their doctor has taken the time to discuss their medication with them.

That's why every Peoples Drug Store has a copy of the "Patient Guide to Prescription Drugs". It's an authoritative directory that provides the drug information patients need most. It informs them about side effects, dosages, and almost

everything they need to know in order to take their medication properly.

And, unlike many books on drugs, it does it all without complicated jargon, using clear, straightforward writing that's easy to understand. You see, when it comes to helping people get the most from their prescriptions Peoples wants to make sure we're all talking the same language.

Every Peoples has an unlisted phone that's reserved only for doctors and answered only by pharmacists. Please call your local store to obtain the number.



WHAT'S NEW?

The CardioCare division of Medtronic has introduced a new pocket-size transtelephonic ECG monitor that promises to markedly improve the ability of physicians to document elusive arrhythmias. Called Memory Trace™, it is light weight and has both single and dual channel recording capabilities. It is the only transtelephonic ECG recorder available with pacemaker stimulus detection, which allows physicians to use it with pacemaker patients.

Johnson and Johnson has the world's smallest transparent film dressing, BIOCLUSIVE® Mini. The 1½ x 1½-inch sterile, hypoallergenic dressing was specially designed to meet the dressing needs of neonatal and pediatric health care professionals for IV sites, small incisions or wounds and aspiration patches.

Marshall Medical, a division of Marshall Electronics, Inc., introduces the TriCUFF, a breakthrough in medical diagnostics. The TriCUFF quickly and conveniently eliminates one of the variables leading to incorrect blood pressure measurement, incorrect cuff sizing. The inside of the TriCUFF inflation bladder is completely different from traditional blood pressure cuffs. Uniquely designed, the bladder offers three separate chambers of varying

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

sizes: 9, 12 and 15 cm. The correct size bladder chamber for the patient's arm circumference is automatically selected by a simple mechanical device when the cuff is secured around the patient's arm.

Midmark has a colorful brochure describing its new 413 Power Female Procedures Chair. Pictures illustrate the many useful chair and horizontal positions available. The chair is described as patient friendly and doctor friendly.

Baxter Healthcare Corporation's Physician Diagnostics has a unique blood glucose monitoring system that markedly simplifies and speeds glucose testing. The ExacTech™ Blood Glucose Monitoring System offers accuracy comparable to that of larger units. To perform the test, a patient simply inserts a test strip into the meter, places a drop of blood on the strip, pushes a button, and reads the result 30 seconds later.

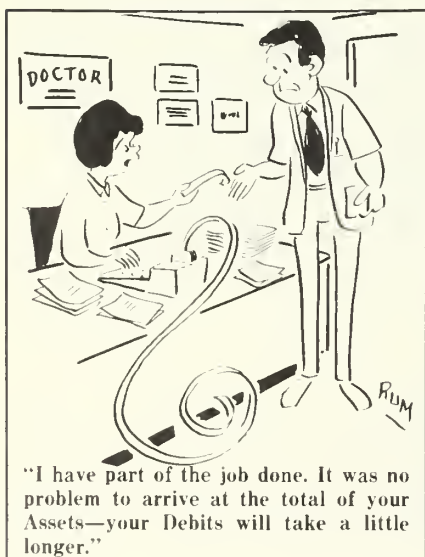
SmithKline Beckman is introducing an AIDS antibody test with no false results in clinical trials. "HIVAGEN" virtually eliminates false-positives and dramatically reduces indeterminate (inconclusive) results. It is based on recombinant DNA technology and highly purified antigens developed by Smith Kline & French Laboratories.

New colorful literature describes the key features and benefits of the Midmark 418/448 Power Otolaryngology System. The 418 Power Otolaryngology Chair features 330° rotation. It

is remarkably stable in any position, a must for minor surgery and in-office procedures.

Researchers in Queens University in Belfast, Northern Ireland, have developed an electronic sensor to detect congenital dislocation of the hip in infants. Through four transducers, the new device can detect both audible and subsonic vibrations. These are read by a microcomputer and may be displayed on a screen.

The Norland Corporation announces a new X-Ray Bone Densitometer, the Model KR26. The new instrument is designed for increased accuracy and precision when quantifying bone mineral density. The instrument has whole body scanning capability utilizing a K-edge filtered x-ray source.



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three million
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who have had
cancer. And now
one out of two
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get well!**

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Common Clinical Concerns

The 24th annual Northern Michigan Summer Conference will be held June 19 to 24 at Shanty Creek in Bellaire, Mich.

"An Update on Common Clinical Concerns" will be the focus of the conference. Topics include AIDS and the Primary Care Physician, The Conservative Approach to Chest Pain, Combating the Viruses, Chronic Illness in Children, and Hypertension and Diabetes Mellitus.

For more information, write to Karen McCalla, CME Office, G1100 Towsley Center, Box 0201, The University of Michigan Medical School, Ann Arbor, Mich. 48109.

Methodist Hospital CME

May 19-20: 23rd Annual Batman Lecture Series; Methodist Hospital Auditorium.

May 20: Laser Lithotripsy, Stone Management Workshop; Methodist Hospital Wile Hall #320.

June 10-11: Ohio Valley Lake Erie Association of Cancer Centers Annual Meeting; Methodist Hospital Auditorium.

For more information, contact Dixie Estridge, CME coordinator, Graduate Medical Center, Methodist Hospital of Indiana — (317) 929-3733.



The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Internal Medicine

The 8th Annual Internal Medicine Review will be presented under the aegis of the Scott & White Memorial Hospital and Clinic, at the Hilton Resort, South Padre Island, Tex., July 24 to 29. It carries 25 hours of CME credit. The fee is \$350.

For registration contact the CME office of the Clinic at 2401 S. 31st St., Temple, Tex. 76508 — (817) 774-2350.

Indiana University CME

May 21-22: New Horizons in Primary Care Medicine; Lincoln Hotel, Indianapolis.

May 24-27: International Clinical Hyperthermia Symposium; Lincoln Hotel, Indianapolis.

June 3: Indiana Residents and Alumni Day, Ophthalmology; Indiana University School of Medicine.

June 4: American Diabetes Association: Diabetes Update; Adam's Mark Hotel, Indianapolis.

June 10-12: Gastroenterology Retreat; French Lick, Ind.

For more information on these and other CME programs, call Melody Dian, CME assistant director, (317) 274-8353.

Magnetic Resonance

The 7th Annual Meeting of the Society of Magnetic Resonance in Medicine will be held Aug. 20 to 26, at the Hilton Hotel and Towers in San Francisco.

For details and registration information, write to the Society at 15 Shattuck Square, Suite 204, Berkeley, Calif. 94704 — (415) 841-1899.

Summer Medical Conferences

The Presbyterian-University of Pennsylvania Medical Center will conduct its Summer Medical Conferences at the Timberline Four Seasons Resort on Route 32, Davis, W. Va.

Seminar topics and dates are: Physician's Nutrition and Disease Prevention, June 10, 11 and 12; Stroke and Vascular Diseases, July 8, 9 and 10; Cardiovascular Complications in Diabetes, July 29, 30 and 31; and Physician's Update on Cancer, AIDS and Liver Disease, Aug. 12, 13 and 14.

The registration fee is \$125. Seven CME credits can be earned. For reservations, call (215) 387-3685.

Berkshire Medical Conference

The Fourth Annual Berkshire Medical Conference will meet in July. Advances in Cardiology will be covered on July 14 to 16. Special Challenges in General Medicine will be the subject for July 21 to 23.

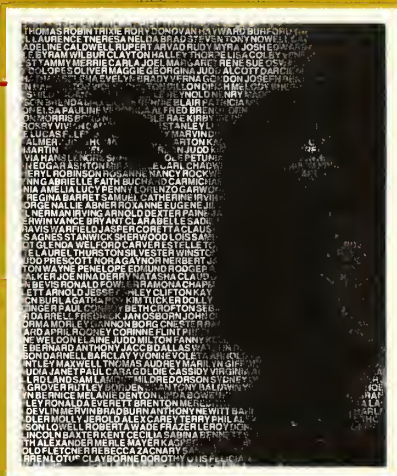
The fees are \$295 for one conference and \$500 for both. The sponsors are the University of Massachusetts Medical School, the Berkshire Medical Center and the Berkshire Area Health Education Center.

For details write the Berkshire AHEC, 725 N. Street, Pittsfield, Mass. 01204 — (413) 447-2417.



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LONG ACTING CAPSULES 60, 80, 120, 160 mg



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 LE SIMPSON BERNARD ERROL CORETTA
 VERETT MARGO LENA LORENZO CLIFF RI
 NMARTIN THOMAS TONY COLEMAN LUCI
 DEN REBECCA COURTNEY NICOLE BREWS
 ER RHONDA TURNER MADELINE ELLEN MC
 OWLER JANET TONY THOMAS ROBERTSON
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 RUSSEL AUDREY ELI DEWE
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...like the more than one million patients who have received **INDERAL® LA**.

In a recent survey, 4,120 participating physicians gave us their views¹ on **INDERAL LA** in the treatment of hypertension, angina and migraine.

INDERAL LA is their preferred beta blocker

...of the nearly three out of four physicians responding to the questionnaire, an impressive 97% rated **INDERAL LA** good to excellent for overall performance. Virtually all cited efficacy, tolerability, long-term cardiovascular protection and once-daily convenience as important factors in their choosing to prescribe **INDERAL LA**.

INDERAL LA promotes patient compliance

...Virtually every responding physician rated patient satisfaction with **INDERAL LA** to be as good as, or better than, other beta blockers.

Like conventional **INDERAL** Tablets, **INDERAL LA** should not be used in the presence of congestive heart failure, sinus bradycardia, cardiogenic shock, heart block greater than first degree and bronchial asthma.

ONCE-DAILY
INDERAL® LA
 (PROPRANOLOL HCl)
 LONG ACTING CAPSULES
 60, 80, 120, 160 mg

The one you know best keeps looking better

Please see next page for brief summary of prescribing information.

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ONCE-DAILY
INDERAL[®] LA
(PROPRANOLOL HCl) LONG ACTING CAPSULES 60, 80, 120, 160 mg

The one you know best keeps looking better



60 mg 80 mg 120 mg 160 mg

BRIEF SUMMARY (FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)

INDERAL[®] LA brand of propranolol hydrochloride (Long Acting Capsules)

DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 60 mg, 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. Inderal is a nonselective, beta-adrenergic receptor-blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor-stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by Inderal, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (60, 80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with Inderal LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of Inderal Tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg-for-mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to Inderal LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, Inderal LA has been therapeutically equivalent to the same mg dose of conventional Inderal as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure, and rate pressure product. Inderal LA can provide effective beta blockade for a 24-hour period.

INDICATIONS AND USAGE. Hypertension: Inderal LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. Inderal LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: Inderal LA is indicated for the long-term management of patients with angina pectoris.

Migraine: Inderal LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: Inderal LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. Inderal LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. Inderal is contraindicated in 1) cardiogenic shock; 2) sinus bradycardia and greater than first-degree block; 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with Inderal.

WARNINGS. CARDIAC FAILURE: Synthetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or Inderal should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of Inderal therapy. Therefore, when discontinuance of Inderal is planned, the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If Inderal therapy is interrupted and exacerbation of angina occurs, it is usually advisable to reinstitute Inderal therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. Inderal should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, eg, dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta blockers should be used with caution in diabetic patients if a beta-blocking agent is required. Beta blockers may mask tachycardia occurring with hypoglycemia, but other manifestations such as dizziness and sweating may not be significantly affected. Following insulin-induced hypoglycemia, propranolol may cause a delay in the recovery of blood glucose to normal levels.

HYPERTHYROIDISM: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol may change thyroid function tests, increasing T₄ and reverse T₃, and decreasing T₃.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. GENERAL: Propranolol should be used with caution in patients with impaired hepatic or renal function. Inderal (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that Inderal may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if Inderal (propranolol HCl) is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncope attacks, or orthostatic hypotension.

Caution should be exercised when patients receiving a beta blocker are administered a calcium-channel-blocking drug, especially intravenous verapamil, for both agents may depress myocardial contractility or atrioventricular conduction. On rare occasions, the concomitant intravenous use of a beta blocker and verapamil has resulted in serious adverse reactions, especially in patients with severe cardiomyopathy, congestive heart failure, or recent myocardial infarction.

Aluminum hydroxide gel greatly reduces intestinal absorption of propranolol.

Ethanol slows the rate of absorption of propranolol.

Phenytoin, phenobarbital, and rifampin accelerate propranolol clearance.

Chlorpromazine, when used concomitantly with propranolol, results in increased plasma levels of both drugs.

Antipyrine and lidocaine have reduced clearance when used concomitantly with propranolol.

Thyroxine may result in a lower than expected T₃ concentration when used concomitantly with propranolol.

Cimetidine decreases the hepatic metabolism of propranolol, delaying elimination and increasing blood levels.

Theophylline clearance is reduced when used concomitantly with propranolol.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY: Pregnancy Category C. Inderal has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. Inderal should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS: Inderal is excreted in human milk. Caution should be exercised when Inderal is administered to a nursing woman.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Light-headedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to cataplexy; visual disturbances; hallucinations; vivid dreams; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics. For immediate formulations, fatigue, lethargy, and vivid dreams appear dose related.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasisiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. Inderal LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from Inderal Tablets to Inderal LA Capsules, care should be taken to assure that the desired therapeutic effect is maintained. Inderal LA should not be considered a simple mg-for-mg substitute for Inderal. Inderal LA has different kinetics and produces lower blood levels. Retitration may be necessary, especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—Dosage must be individualized. The usual initial dosage is 80 mg Inderal LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—Dosage must be individualized. Starting with 80 mg Inderal LA once daily, dosage should be gradually increased at three- to seven-day intervals until optimal response is obtained. Although individual patients may respond at any dosage level, the average optimal dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—Dosage must be individualized. The initial oral dose is 80 mg Inderal LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimal migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximal dose, Inderal LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg Inderal LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

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Reference:

1. Data on file, Ayerst Laboratories.

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Evaluation of the Uterine Cervix for Cancer

ROBERT E. ROGERS, M.D.¹
RICHARD HANSELL, M.D.²

CANCER OF THE CERVIX is widely considered a preventable disease. If this is true, why will 12,000 American women develop invasive cancer of the cervix in 1988, and why will 6,000 die?¹

The incidence of cervical carcinoma and the mortality secondary to that disease have fallen sharply over the past 30 years, but both the carcinoma and its precursors remain significant health problems.² A fall in incidence rates from 28.4 per 100,000 women age 20 or more to 8.6 per 100,000 women in British Columbia was noted between 1955 and 1974.³ Christopherson reported that age-adjusted incidence of invasive carcinoma decreased by 58% in the 20 years following the introduction of cytologic screening.⁴ This fall in the incidence of invasive cancer to a large extent reflects success in the detection and treatment of premalignant lesions, which represent the majority of cervical neoplasia.

The mortality attributed to cervical cancer in this country decreased approximately 50%, in part because of a decreased incidence of invasive cervical carcinoma, but also because of earlier detection of cancer and its precursors.⁶ The case for earlier detection and treatment is further strengthened by the finding that, in countries where cervical cancer screening is not frequently performed, the incidence of invasive cancer and its attendant mortality is actually increasing.⁶ In the Scandinavian countries, where screening has been in place since early in the 1960s, the incidence of invasive cervical cancer has been reduced by 80%.⁶ There is overwhelming evidence that cytologic screening has resulted in the earlier detection of cervical carcinoma and is a primary factor in reducing both its incidence and mortality rates.

Exfoliative cervical cytology developed through the research of Dr. George Papanicolaou. In 1917, Dr.

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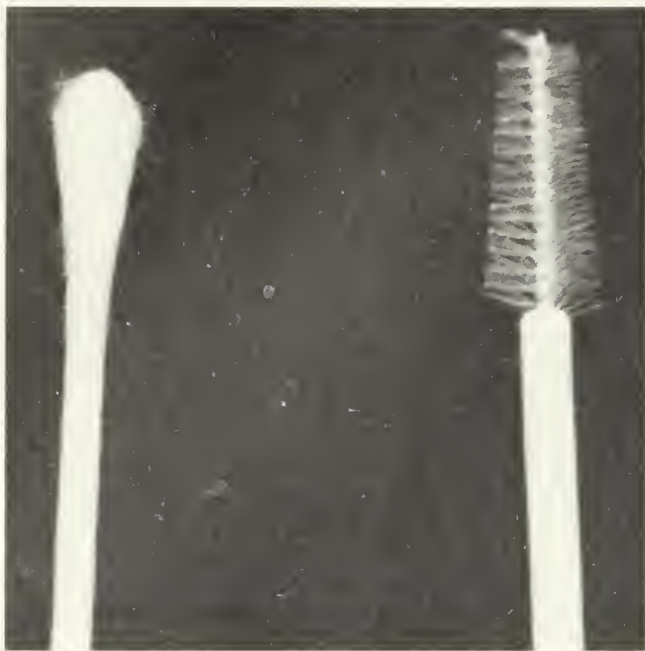


FIGURE 1



FIGURE 2

Papanicolaou's primary interest was in the physiology of the female genital tract of guinea pigs. He was able to observe changes in vaginal cells secondary to the estrus cycle of the rodents. In 1928, Dr. Papanicolaou, while studying human vaginal secretions, reported the finding of cancer cells originating from a carcinoma of the cervix. In 1941, in collaboration with Herb Traut, Papanicolaou reported a controlled study of exfoliated cytology in humans.⁸ This early report was followed by Papanicolaou and Traut's classic monograph on vaginal cytology as a diagnostic tool for early cervical cancer.⁹

Cervical cytology, the "Pap smear," is our most important tool in the early detection of cancer precursors and invasive cancer of the cervix. There is wide disagreement, however, in regard to how reliable the smear is for achieving this purpose. A number of reports suggest that false-negative rates vary between 5 and 50%.¹⁰ This high false-negative rate has been recognized for many years and was widely considered an inherent defect in the test. Richart¹¹

and others have pointed to faulty sampling techniques on the part of physicians as a major contributor to false-negative smears. More recently, the efficiency of the laboratory screening process itself has been questioned.¹²⁻¹³

A cytologic false-negative may occur through one of four mechanisms:

- Failure of the neoplasm to shed abnormal cells (rare);
- Failure by the physician to sample a neoplastic area;
- Failure by the laboratory to recognize cytologic abnormality; and
- Failure to properly handle and stain the specimen.

If the false-negative rate is to be reduced, improvements must be made in these areas.

When cervical cytology first became a clinical tool, it was traditionally obtained on a yearly basis. In 1976, a report of a task force on cervical cancer screening headed by Professor R. J. Walton appeared in the *Journal of the Canadian Medical Association*.¹⁴ The report proposed an initial smear taken on every woman over the age of 18 who

had had sexual intercourse. If the initial smear was satisfactory and negative, a second smear should be taken a year later. If the first two smears were satisfactory and negative, subsequent smears should be taken at approximately three-year intervals until age 35 and thereafter at five-year intervals, until age 60. The Walton report recognized that if a woman was in the "high risk" group, then screening should be obtained annually.

In 1980, the American Cancer Society, in its report, "The Cancer Related Health Checkup," recommended that all asymptomatic women age 20 and over, and those under 20 who were sexually active, have a cytology annually until two negative examinations were obtained, and then at least every three years until age 65.¹⁵ This report generated considerable controversy and confusion, which still persists. American gynecologists have long argued that an increase in the cytology screening interval may endanger patients. This concern is based on the inability to determine which patients are high risk, and the inability

to reduce the recognized high false-negative rate of cervical cytology.

The American College of Obstetricians and Gynecologists continues to recommend a yearly screening for cervical cancer in all sexually active women and for all women over the age of 18.¹⁶ The most recent statement, released in January 1988, states: "All women who are, or have been sexually active, or have reached age 18 should have an annual Pap test and pelvic examination. After a woman has had three or more consecutive, satisfactory, normal annual examinations, the Pap test may be performed less frequently at the discretion of her physician."

A patient who has been treated for intraepithelial neoplasia should be followed with cytology on a plan that is well understood by the patient and her physician. At Indiana University, following hysterectomy or therapeutic cone biopsy, the patient has cervical cytological examinations every three months until two examinations are reported negative. After two negative examinations, the patient has cytology examinations every six months for five years and then yearly for the rest of her life. After hysterectomy for non-neoplastic disease, the vagina is evaluated with cytology every three years.

There is no question that sampling technique is a major factor in the high false-negative rate. When cervical cytology was first introduced, a bulb syringe was used to aspirate secretions from the posterior vaginal fornix. Secretions were then smeared on a slide and stained with Papanicolaou stain for cytologic examination. In 1947, Ayre suggested scraping the exocervix with a spatula to obtain a better sample. In 1955 Wied and others proposed the use of a cotton-tipped applicator to collect a sample from the endocervical canal.

The combination of an endocervical swab or aspiration together with an exocervical scrape has been strongly recommended as the method of choice.

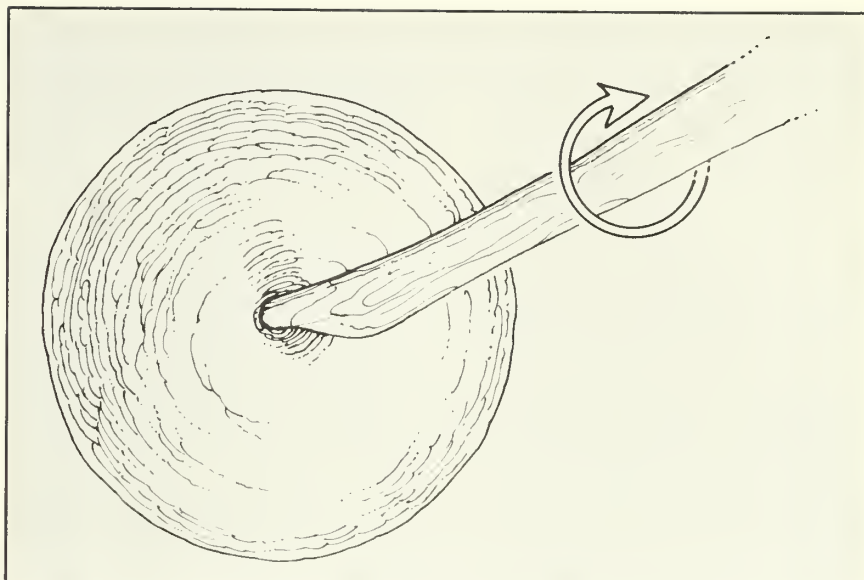


FIGURE 3

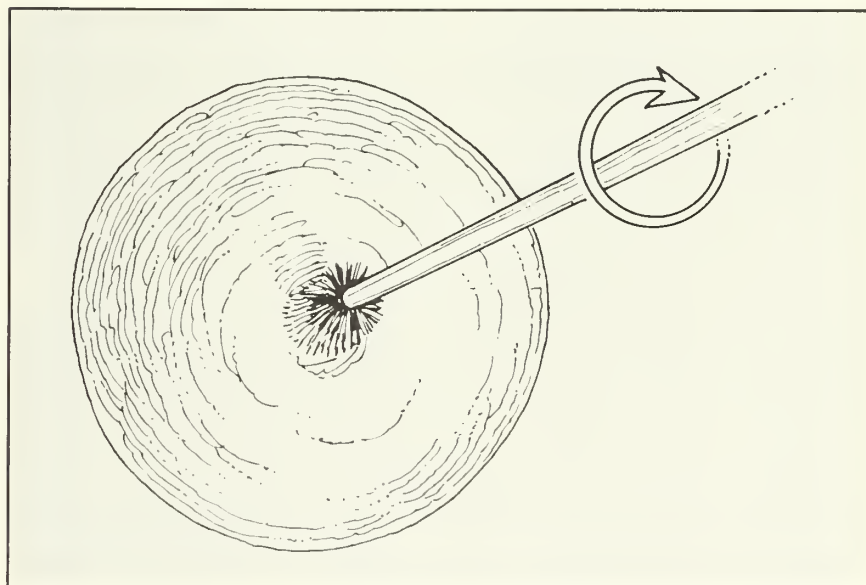


FIGURE 4

The weakness of cervical cytology is most often in the endocervical collection of specimen. Richart has suggested that aspiration of endocervical mucus for cytologic study will decrease the false-negative rate to as low as 5%, but the technique has not been well accepted. More recently, Boon and others¹⁷ described the use of a spatula

and cytobrush sampling for cervical cytology. The cytobrush is shown in *Figure 1*. This instrument is still being evaluated, but it does appear to reduce the false-negative rate and provide slides of improved quality for cytologic study.

The exocervix is sampled with an Ayre spatula, either in the conven-

TABLE

Descriptive:	Normal	Benign Atypia	Mild Dysplasia	Moderate Dysplasia	Severe Dysplasia	In Situ Cancer	Invasive Cancer
Papanicolaou:	I	II		III		IV and V	

tional design as shown on the right in *Figure 2*, or one of the augmented designs as shown on the left in *Figure 2*.

Regardless of the tool used, the cervix must be fully visualized and abraded both on the exocervical (*Figure 3*) and endocervical (*Figure 4*) surfaces.

The cytologic specimen may be fixed by immersion or spray techniques. The most common immersion fixative is 95% ethyl alcohol. The nature of this fixative makes it difficult to transport; consequently, it is most often used when cytology is being read in the institution where it was collected. Many cytologists continue to consider immersion fixation superior to spray techniques. Spray fixation is accomplished in a number of ways, using either pump-applied or aerosol-applied fixatives to the slide. The one common denominator important to the success of the cytological evaluation is the timeliness of fixing. The smear must be fixed before it dries out. Air drying is the single most important mistake in the handling of cytologic material.

The choice of a cytologic laboratory is important. It has been repeatedly demonstrated that approximately half of the false-negative smears reflect errors in laboratory screening diagnosis. The remainder obviously reflect inadequate sampling techniques. While high laboratory fees may not guarantee quality, bargain laboratory fees will frequently cost the patient more in the long run. Low laboratory fees may indicate overworked cytotechnologists, inadequate supervision of cytotechnologists, lack of quality control and the absence of a pathologist with adequate cytologic training.

Choosing a laboratory accredited by

the College of American Pathologists or the American Society of Cytology with cytotechnologists certified by the American Society of Clinical Pathologists guarantees training, quality control and pathological backup to some degree. The choice of a laboratory that reviews over 25,000 smears a year should guarantee enough abnormal cytology to keep cytotechnologists alert.

The choice of a laboratory that reports findings in a histology-oriented nomenclature would indicate the laboratory is in touch with modern cytologic methods. The clinician might also ask how many cytotechnologists are employed. The number of full-time as compared to part-time employees is important in that part-time employees are usually paid by the case, which may encourage excessive volumes and after-hours work with limited supervision.

The cervical lesions considered as precursors of invasive carcinoma are generally classified as benign reactive atypia; mild, moderate, and marked dysplasia; and carcinoma in situ. This classification, sponsored by the World Health Organization, is similar to that rendered by pathologists examining histologic sections of tissue biopsies. In many progressive institutions it has replaced the classifications of from I to V which were originally employed by Dr. G. N. Papanicolaou. The number system, unfortunately, has been abused and misunderstood, and lends itself to equivocation on the part of the laboratory. The descriptive system is compared with the Papanicolaou system in the *Table*.

A modern report may contain the following information:

- Specimen adequacy

- Cellular process
 - a. Benign, reactive or inflammatory
 - b. Premalignant
 - c. Malignant
- Cell type
 - a. Epithelial (squamous, glandular)
 - b. Mesodermal
- Suggestion
 - a. Follow-up testing
 - b. Sampling method modification

The laboratory may further help the clinician by describing the degree of differentiation of dysplastic cells.

Keratinizing dysplasia generally refers to a lesion which is located on the visible cervix, while nonkeratinizing dysplasia is most frequently located adjacent to the transformation zone between squamous epithelium and endocervical epithelium. Metaplastic dysplasia is found most proximal to the transformation zone in the endocervical canal. Atypical reserve cell hyperplasia implies an endocervical lesion that is particularly troublesome because of its ability to progress to a small cell neoplasm without transition through a dysplasia. These lesions are difficult to adequately sample and to visualize with a colposcope.

Communication between the clinician, the cytotechnologist and the pathologist is extremely important. The clinician should welcome suggestions from the laboratory in regard to the collection of cytological material. The clinician should appreciate the information that "inadequate cells are present" on a slide, thereby precluding accurate evaluation. The finding of "no endocervical cells seen" may indicate that the endocervix was not effectively sampled, and the warning that "heavy inflammation is present"

should alert the clinician that a neoplasm may be masked by inflammation. The clinician must then decide from his knowledge of the patient whether another sample should be obtained.

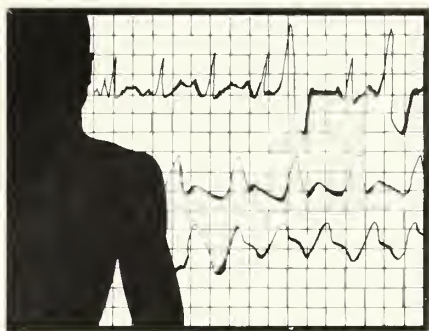
Just as communication from the laboratory to the clinician is important, communication to the laboratory is of great value. The laboratory should be made aware of a patient's history of neoplastic disease, age, pregnancies and hormonal status. With this information the laboratory will be able to weigh the appropriateness of the cytological findings with the patient's clinical state.

A yearly cytological examination of the cervix has been estimated to reduce the chance of dying of cervical cancer from 4/1,000 to 5/10,000, a difference of nearly 90%. In view of this fact it is worrisome that only 10 to 20% of American women have cervical cytological examinations on a yearly basis.¹⁹ To reduce the cervix cancer death rate further, we must convince our patients that yearly examinations are worthwhile, be more attentive to the collection of cytologic material, and demand the establishment of quality assurance in cytological laboratories.

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Alternative Methods of Communication for Intubated Patients in Critical Care



ADULT CRITICAL CARE MEDICINE

Methodist
Hospital OF INDIANA, INC.

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Indianapolis

MECCHANICAL SUPPORT of ventilation is frequently required in the treatment of critically ill patients. Intubation may be established to manage respiratory insufficiency, provide airway protection, suction tracheobronchial secretions, or to circumvent upper airway obstruction. Initial intubation is usually translaryngeal, either orally or nasally, with transtracheal conversion via tracheostomy being reserved for prolonged management.

Intubation interferes with the capacity to speak normally, regardless of the route of the artificial airway. Endotracheal and tracheostomy tubes with inflated cuffs seal the airway inferior to the larynx and interrupt airflow across the vocal cords that is necessary to produce voice. Even when the cuff is deflated, endotracheal tubes physically compromise laryngeal function, and oral intubation obstructs the capacity to articulate speech.

Admission to a critical care unit is undoubtedly a frightening experience for most patients. The unexpected inability to communicate further compounds an already difficult situation and often becomes the source of anxiety and frustration for the patient, his family and the medical staff. Fortunately, in recent years interest has focused on the communication needs of non-speaking patients in the acute care setting, and speech-language therapists are being asked to become involved in their care.

Initial Screening

Upon receipt of a consultation request, the therapist will assess the patient to determine if he or she is an appropriate candidate. Not all intubated patients can successfully use an alternative communication system. Medical chart review, consultation with nursing staff and abbreviated bedside evaluation readily identify inappropriate candidates. Unresponsive or confused patients are deferred for reassessment when their status improves.

Responsive patients who can follow simple commands are considered appropriate candidates. Further evaluation determines the alternative communication approaches that are most likely to be useful.

Alternative communication approaches can be broadly classified as oral or non-oral. Oral systems provide a means of audible speech utilizing the patient's larynx or an artificial voicing source. Non-oral approaches include simple communication boards with which the patient or someone assisting him spells words by pointing out individual letters, or selects pictures, words or phrases to communicate. More recently, a variety of sophisticated electronic communication boards have also become commercially available. This article will be limited to a description of oral communication approaches.

Minimal Cuff Leak

Voice produced with the patient's larynx is the most acceptable and intelligible method of communication. This can be accomplished in selected tracheotomized patients by minimal cuff deflation. This permits small

From Head and Neck Surgery Associates, Indianapolis.

Illustrations for this article were prepared by Brenda Kester, Medical Illustrator, Methodist Hospital of Indiana, Indianapolis.

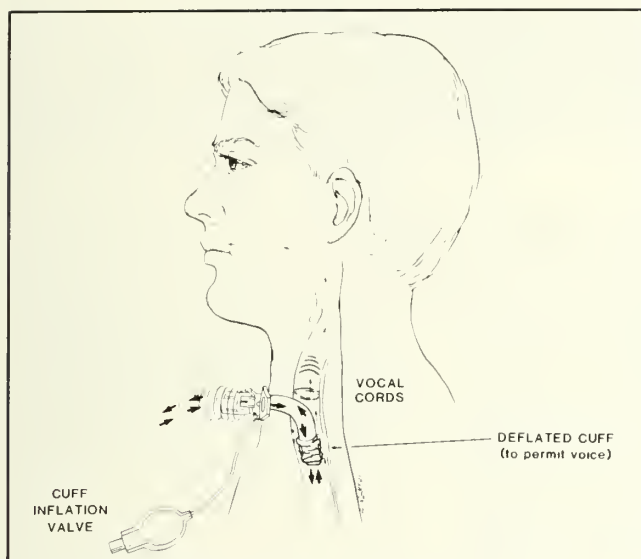


FIGURE 1: Minimal cuff leak for speech.

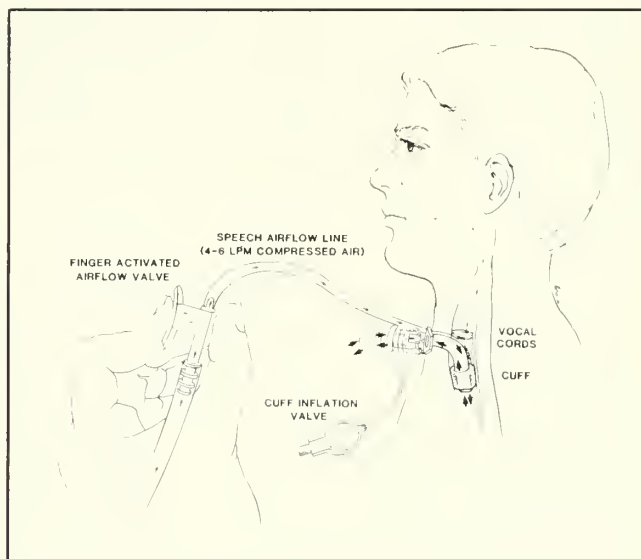


FIGURE 2: Talking tracheostomy tube.

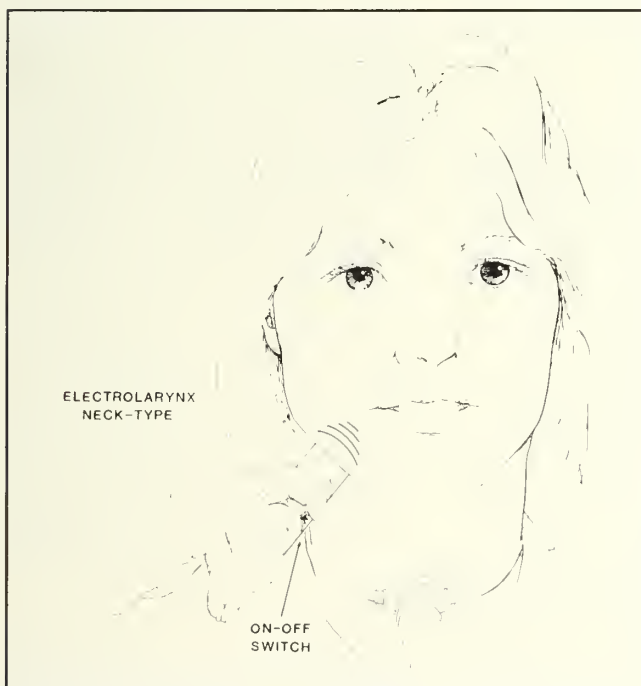


FIGURE 3: Neck-type electrolarynx.

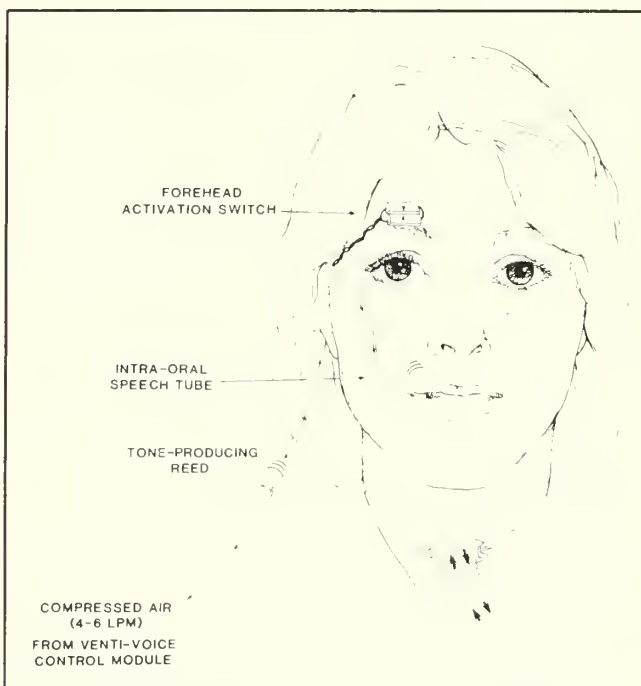


FIGURE 4: VentiVoice® pneumatic artificial voice system.

amounts of air to escape around the cuff and through the vocal cords for phonation (Figure 1). Ventilated patients learn to sequence a brief utterance as some of the air being delivered to the lungs is forced around

the cuff during the inspiratory cycle. A slight increase in ventilator tidal volume or cycle frequency may be required to compensate for the cuff leak. Minimal cuff leak should only be utilized when it can be demonstrated that

respiration is not compromised and aspiration of secretions or feedings does not result from diminished airway protection. Some patients may simply require full cuff re-inflation during meals.

Talking Trach Tube

Tracheotomized patients who require constant cuff inflation may be able to speak with near normal voice if a "talking" tracheostomy tube is used (*Figure 2*). These tubes are manufactured with an additional narrow gauge tube attached to the convex surface of the tracheostomy tube, which exits into the trachea just above the inflated cuff. Compressed air can be directed intermittently to that tube and released into the trachea/larynx through this tube, independent of respiration, for speech. This gas diversion is accomplished by manually occluding the valve on the speech airflow line.

Although talking tracheostomy tubes have been available for many years, clinical experience with them has been generally disappointing. Some patients achieve very audible voice, while a significant number produce little more than an audible whisper. Voice failure is frequently attributable to one of the following factors: 1) incomplete tracheostomy tube insertion resulting in speech airflow obstruction by pretracheal tissue, 2) enlarged tracheostomy permitting escape of speech airflow around the

tube and from the tracheostomy stoma, 3) incomplete cuff seal, and 4) vocal cord dysfunction. Frequently, audible voice results when these problems are corrected.

Electrolarynx

Electrolarynx devices developed to provide substitute voice after laryngectomy are often useful with non-speaking intubated patients. These instruments are battery-powered tone generators that introduce an artificial sounding "voice" directly into the vocal tract, either through a small plastic tube inserted in the mouth, or by direct placement against the anterolateral aspect of the neck (*Figure 3*). The patient is taught correct device placement, voice activation and precise speech articulation. The electrolarynx provides a method of relatively immediate speech requiring minimal instruction.

VentiVoice

The ventilator-dependent quadriplegic patient is one of the most compromised of all non-speaking intubated patients. He is unable to communicate by speech, gesture or writing. In some

patients, an electrolarynx can be utilized to provide a voice, but the patient remains dependent on others to both hold and activate the device. Minimal cuff leak technique for speech is usually contraindicated in the acute post-trauma period. Talking tracheostomy tubes are frequently not functional.

To circumvent these problems, the author co-developed VentiVoice® which is a pneumatic-operated artificial voice system generated by a musical reed (*Figure 4*). The paralyzed patient activates the system with a forehead wrinkle switch, and sound introduced into the mouth through a tube is articulated into speech.

Summary

We generally take our ability to communicate for granted. Interruption of speech at the time of a life-threatening illness additionally stresses the patient, family members and those responsible for his care. A number of useful alternative communication approaches have been developed that contribute significantly to the management and general well-being of selected non-speaking patients in the critical care setting.

Drug and Alcohol Withdrawal: Methods for Patient Management

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THE AUTHORS HAVE frequently been asked for assistance with protocols for withdrawal from inpatients, outpatients and jail inmates. Out of these requests have come the following guidelines, which have been modified over time to their current status.

These protocols are designed for narcotic and non-narcotic habits that do not warrant consideration of methadone withdrawal. These would include a patient's preference to avoid the use of methadone. They can be used in any setting and require no special licensing other than a DEA registration. They are straightforward and relatively easy to explain to patients and their families.

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Acknowledgments: Maria A. Waddell, Ph.D., and Linda S. Wright, B.S., for assistance in reviewing and preparing the manuscript.

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Abstract

Methods for management of withdrawal from all addictive drugs and alcohol are reviewed and updated. These strategies are designed mainly for outpatients, but when inpatient treatment may be necessary, methods to determine this are included. A philosophy of treatment is integrated into the overall discussion of these protocols.

General Principles

Except when life-threatening overdoses or serious side effects such as DTs or convulsions are likely to be encountered, outpatient detoxification programs are less expensive, and the preponderance of evidence indicates that inpatient detoxification is no more successful.^{1,4}

In comparing a variety of programs for withdrawal from drugs, it has been our clinical experience that if all of a patient's withdrawal symptoms are completely attenuated, the individual may simply then become addicted to these substituted medications. By contrast, it seems to us that patients achieve a higher rate of success in their efforts to conquer their habits if it is explained to them that the relief of all of their symptoms would only continue their habits or addict them to something else; and, therefore, only severe symptoms will be alleviated so that the process will be more bearable. When these realities are presented in a matter-of-fact fashion while not succumbing to nor responding negatively to the patient's anger, threats or pleadings, most addicts will grudgingly accept the validity of this approach and

participate in the detoxification if they truly wish to discontinue or to reduce their habits.

For the alcoholic, we often find just the opposite is true. Alcoholics, if allowed to suffer throughout the withdrawal process, often later tell us that their discomforts simply fueled their resentments and angers and that they then used their experiences as excuses to drink again. Nor does hospitalization seem to have as adverse an effect upon the alcoholic's success in detoxifying; although, because of the expense as well as lack of bed space within hospitals, it is appropriate to detoxify as many as possible on an outpatient basis.⁵

Interestingly, we find the principles that have just been outlined in the two preceding paragraphs are frequently reversed in the minds of many physicians. They often accede to an opiate addict's grating complaints while more or less ignoring the undramatized sufferings of the alcoholic. Actually, except for seizures while withdrawing from barbiturates and other similar drugs (meprobamate, ethchlorvynol, benzodiazepines), most withdrawal sufferings (according to experienced addicts) are nothing more severe than a serious case of the flu, and no physical danger is faced even when going "cold-turkey." On the other hand, withdrawal from alcohol can be life-threatening or produce irreversible damage to the cerebral cortex if appropriate medications are not prescribed.⁶

The Withdrawal Process

Generally, two or three weeks is an optimum period over which to conduct a patient's detoxification, being slow enough that the symptoms are not ex-

TABLE 1
Detoxification Protocol for Opiates

First Week (daily for 7 days):

Promethazine 25mg	i qid disp 4
Propantheline 15mg	i tid disp 3
Chloral hydrate 500mg	iii hs disp 3
Multivitamins	ii daily disp 2

Second Week (daily for 7 days):

Promethazine 25mg	i tid disp 3
Propantheline 15mg	i bid disp 2
Chloral hydrate 500mg	ii hs disp 2
Multivitamins	i daily disp 1

Third Week (daily for 7 days):

Promethazine 25mg	i bid disp 2
Propantheline 15mg	i daily disp 1
Chloral hydrate 500mg	i hs disp 1

Fourth Week:

Promethazine 25mg	i daily disp 7
-------------------	----------------

TABLE 2
Detoxification Protocol for Alcohol

First Week (daily for 7 days):

Chlordiazepoxide 25mg	i tid disp 3
Chloral hydrate 500mg	ii hs disp 2
Thiamine HCl 100mg	i bid disp 2
Multivitamins	ii daily disp 2

Second Week (daily for 7 days):

Chlordiazepoxide 25mg	i bid disp 2
Chloral Hydrate 500mg	i hs disp 1
Thiamine HCl 100mg	i daily disp 1
Multivitamins	i daily disp 1

Third Week (daily for 7 days):

Chlordiazepoxide 10mg	i qid disp 4
Disulfiram 500mg	i daily disp 1

Maintenance (weekly):

Disulfiram 250mg	1 daily disp 7
Psychotherapy (group or individual)	

ceptionally painful while rapid enough that the patient can keep the end in sight and not become discouraged because of a lack of progress. For success, medications must be dispensed daily. Otherwise, these patients may simply sell the prescribed medications in order to obtain their favorite street drugs.

Because of the phenomenon of state-dependent learning, addicted people will often forget their coping skills while undergoing detoxification. It will usually suffice to use simple reassurance that this is a perfectly normal phenomenon, lasting from six to eight weeks on the average, and coping skills can be re-acquired as soon as one reaches a non-drugged tension state. However, the sense of empty-headed estrangement during this period is quite disconcerting and often provides the drive by which these patients will discontinue the detoxification program and return to their habit.

Frequently, drug addiction is simply a symptom of the person's attempt to

treat underlying illness (depression, anxiety attacks, schizophrenia, etc.) with street drugs⁷ because of an inherent distrust of others, especially of "the system"; the appropriate addition of specific medications for emerging emotional disorders will aid in the potential success of a detoxification attempt. However, none of the anxiolytics, pain medications or CNS depressants should be used. Even among the tricyclics, amitriptyline has been abused (because of its soporific effects) and is to be avoided as treatment for emergent depressions.⁸

Specific Detoxification Routines

PROTOCOL A—Opium, heroin, morphine, codeine, hydromorphone, oxycodone, meperidine, methadone, diphenoxylate, hydrocodone: The recommended protocol for these opioid drugs is shown in *Table 1*.

An antipsychotic should be substituted for the promethazine in the event of the emergence of an underlying schizophrenic illness as detoxification

proceeds. Likewise, tricyclics (except amitriptyline) may be substituted if an underlying depression emerges, and lithium may be an adjunct to the antipsychotic if a bipolar or schizoaffective disorder appears.

It has been argued that one can attain successful detoxification from opiate addictions using clonidine^{9,10} or clonidine-naltrexone combinations.¹¹ Zucker *et al.*¹² outline the protocol for clonidine withdrawal as follows: Begin clonidine at 15 to 20 mcg/kg/day in every eight-hour doses. Continue this regimen for several days (up to 14 days for withdrawal from methadone). Then taper the dose by 50% of preceding day's dose over four to six days. If naltrexone is added, it is increased over the time of treatment, starting at 1 mg po every four hours prn for withdrawal symptoms to as much as 50 mg per day toward the end of treatment. Methadone can also be used for withdrawal, usually at the rate of 1 mg per day. None of these methods has proved very satisfactory, at least for

outpatients,¹³⁻¹⁵ and in our hands the protocol outlined in Table 1 has been much more useful.

Pentazocine and tripeleminamine (Talwin and Pyribenzamine): Because of the manufacturer's addition of naloxone to pentazocine, it is doubtful that IV habits of pentazocine abuse will be seen in the future. For oral pentazocine habits (T's and Blues), methadone maintenance, 21-day methadone withdrawal or the detoxification protocol for hard narcotics (Protocol A) can be used. The use of pentazocine itself as a detoxification vehicle has proven to be unsatisfactory.

Propoxyphene (Darvon, Darvon N): Because of federal regulations, it is unlawful to use propoxyphene for withdrawal of patients from any addicting medication, including propoxyphene itself. Therefore, only three alternatives are available: For most propoxyphene habits, methadone maintenance or 21-day methadone detoxification will be necessary. However, an occasional patient may wish a non-methadone program, and, for this, the detoxification program for hard narcotics (Protocol A) can be used.

PROTOCOL B—Alcohol (as well as mixed alcohol/drug abuse in which alcohol predominates): The detoxification program recommended for alcohol is listed in Table 2.

For inpatients with a history of withdrawal seizures, phenytoin may be added to this regimen^{5,16} in the following manner: phenytoin, 300 mg p.o. initially as a loading dose, followed by 100 mg qid x 7 days. It should be discontinued thereafter. A 50% solution of magnesium sulfate, 2cc IM q6h for two days, has also been used to decrease neuronal irritability and seizures if kidney function is good.¹⁷

PROTOCOL C—Barbiturates:

Calculation of Initial Dose:

1. Ask the patient to come to clinic in a state of early withdrawal.
2. Test Dose: Pentobarbital 200 mg.
3. Observe for following:
 - A. If patient falls asleep, no treatment is required.

TABLE 3 Example Protocol for Barbiturate Detoxification															
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AM	3	3	3	3	2	2	2	2	1	1	1	1	0	0	0
Noon	3	3	3	3	3	2	2	2	2	1	1	1	1	0	0
PM	4	4	3	3	3	3	2	2	2	2	1	1	1	1	0
HS	4	4	4	3	3	3	3	2	2	2	2	1	1	1	1
	14	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Total number of 30mg tablets dispensed each day.															
Total number of tablets for days 1 and 2	24 hours					x test dose			x conversion						
	hours of comfort					in mg			factor						
						size of withdrawal tablet			in mg						

B. If, before two hours elapse, patient shows marked tremors, orthostatic hypotension, weakness, increased reflexes and severe pleading for drug, it is probable that inpatient detoxification is required because of potential seizures.

C. If, after two hours, patient is comfortable, continue to observe until objective signs of withdrawal are present.

4. Calculate dose required to stabilize for 24 hours. Substitute 30 mg of phenobarbital for each 100 mg of pentobarbital in calculated dose. Divide into four equal doses and dispense with instructions to take one dose each on arising (AM), at noon, at 5 p.m. and hs. Stabilize patient on this dose for two days. Reduce total dose of phenobarbital by 30 mg each day (i.e., reduce in rotation, one of the four divided doses by 30 mg).¹⁸

Example: A patient reports a barbiturate habit of 30 "reds" daily. Following a test dose of 200 mg pentobarbital, withdrawal symptoms appear at three hours and 45 minutes. (The patient is comfortable for 3½ hours.) To calculate stabilizing dose: 24 hours divided by 3½ hours times 200

mg equals 1,371 mg pentobarbital times 0.30 (to convert to phenobarbital) equals 411 mg phenobarbital daily divided by 30 equals fourteen 30 mg tablets of phenobarbital to dispense daily as a stabilizing dose. Table 3 gives the method of stabilizing the patient and then reducing the dose. The numbers in the body of the table are the number of 30 mg phenobarbital tablets in each of the four daily doses.

Methaqualone (Quaaludes): Because of the lack of availability of methaqualone for test doses or for detoxification programs, it is necessary to substitute pentobarbital as the test vehicle and to substitute phenobarbital as the withdrawal vehicle. This, however, is not without its problems because, in these patients, the excretory pathways for barbiturates may not have been established (as in the straight barbiturate addict) and the calculated dose and withdrawal rate of phenobarbital could, conceivably, lead to a buildup of this drug. Therefore, in these patients, particular attention should be given to daily observations for signs of ataxia, of slurring of speech, and of somnolence; the use of occasional blood barbiturate levels to monitor the effectiveness of this program may be in order. With these pre-

cautions in mind, the detoxification protocol is much as for barbiturates.

Withdrawal from Drugs Using the Drug of Abuse—Sedatives, hypnotics, anti-anxiety medications such as lorazepam, chloral hydrate, flurazepam, glutethimide, chlordiazepoxide, meprobamate, methypylon, ethchlorvynol, temazepam, oxazepam, clorazepate, diazepam and alprazolam: Each protocol is fashioned in much the same manner as the barbiturate and methaqualone protocols. Instruct the patient to come to the clinic with early symptoms of withdrawal. The test dose of the drug of abuse is shown in Table 4.

Measure the time until symptoms reappear. Calculate the daily requirement for symptom relief and divide into four approximately equal doses to be taken at AM, noon, PM and hs. Stabilize the patient for two days; then reduce daily dose by one increment (test dose) each day. As with methaqualone detoxification, it is possible to substitute phenobarbital as the withdrawal vehicle in the proportions shown in Table 5.

Again, however, if phenobarbital is selected as the withdrawal vehicle, it should be understood that barbiturate tolerance and excretion rates may not be as high as a barbiturate addict's, that great care needs to be exerted in observing for barbiturate toxicity (somnolence, slurring of speech and ataxia), and dose reduction should be adjusted accordingly.

Withdrawal from Other Drugs of Abuse—Amphetamines, methamphetamine, benzamphetamine, dextroamphetamine, diethylpropion, phenmetrazine, cocaine, methylphenidate, caffeine and most diet pills:

Chlordiazepoxide 10 to 25 mg tid to qid may be useful during the acute restlessness and excitement of the amphetamine "high." Care is required, however, to assure that the patient does not simply wish to alternate between the tranquility of chlordiazepoxide and the "high" of the stimulants. Any medications dispensed should be sufficient only for one day's treatment

TABLE 4
Test Dose Equivalents

Chloral Hydrate—500mg
Diazepam—10mg (which can be substituted for other benzodiazepenes)
Ethchlorvynol—500mg
Glutethimide—0.5Gm (500mg)
Meprobamate—400mg
Methypylon—100mg

Alternatively, pentobarbital 200mg po may be used as above.

TABLE 5
Phenobarbital Substitution Equivalents

Phenobarbital 30mg is equivalent to each of the following:

Alprazolam—0.25mg
Chloral Hydrate—500mg
Chlordiazepoxide—25mg
Clorazepate—15mg
Diazepam—10 to 20mg*
Ethchlorvynol—350mg
Flurazepam—30mg
Glutethimide—250 to 500mg
Lorazepam—2mg
Meprobamate—400mg
Methypylon—100mg
Oxazepam—30mg
Pentobarbital—100mg
Temazepam—30mg

*10mg=abuse 6 months or less;
20mg=abuse longer than 6 months.

Adapted from Hayner and Inaba, 1983.¹⁹

and should be dispensed on a daily basis.

Haloperidol 2 mg to 5 mg tid to qid may be useful in the paranoid state associated with prolonged stimulant abuse.

Tricyclics may be useful in the long-

term management of the underlying depressions so often seen in stimulant abusers later in treatment.²⁰ Lithium carbonate and desipramine in the usual therapeutic doses²¹ have been suggested for this problem in persons using cocaine.

Hallucinogens: No significant withdrawal symptoms are known for the hallucinogens although flashbacks may be considered, by some, to be a withdrawal or an abstinence phenomenon. These flashbacks seem to respond rather well to low or moderate doses of antipsychotics, chlorpromazine and thiothixene in particular.

However, when treating the acute effects of hallucinogens, several points are to be remembered. Most of these substances are anticholinergic; and, thus, most phenothiazines are contraindicated because of potentiating anticholinergic effects. Haloperidol or thiothixene may be helpful. Here diazepam might have a legitimate, but brief, value for its calming effects. Ascorbic acid, 1 gm qid, may aid in the urinary excretion of some of these drugs.²² Lithium carbonate seems useful in the acute excitement sometimes seen following PCP (phenylcyclidine) ingestion, but uncooperativeness of the patient may make its use difficult.²³

Cannabinols: Neither tolerance nor physical dependence are major problems with marijuana²⁴ although Schnoll and Daghestani²⁵ believe they have identified an abstinence syndrome in chronic high-dose users. This consists of decreased sleep and appetite, anxiety, restlessness, nausea, vomiting, tremors and diarrhea. Usually no medication is needed as these symptoms often last only four to five days, but a tricyclic antidepressant, such as desipramine, may be used. Chlordiazepoxide 10 mg to 25 mg bid to qid may be useful in the flashbacks and panic attacks sometimes associated with chronic marijuana use although, again, they are seldom necessary.²⁵

Solvents, Glues, Paints and Aerosols: Withdrawal symptoms do not develop

even with protracted use. Panic states usually have abated by the time medical attention is sought. Flashbacks are not known to occur with these substances.²⁶

Over-the-Counter Drugs: Physical dependence and withdrawal symptoms are not problems with antihistaminics and scopolamine. Over-the-counter analgesics (aspirin, acetaminophen) may be associated with headaches and other pains on withdrawal. Laxative withdrawal may be helpful to some patients. Withdrawal schedules can be designed in accordance with the principles in Protocol C.

Steroids, Oxygen, Paraldehyde, Tobacco: The principles of withdrawal of these substances are based upon the establishment of a stabilizing dose followed by a gradual reduction of the supply as has been outlined in several of the foregoing sections. The same principle can be applied to any other substance to which humans can become addicted, but, at times, withdrawal can be difficult (e.g., tobacco). Tobacco addiction has been treated using a number of interventions including counseling, hypnosis and various medications such as clonidine²⁸ and propranolol.²⁹ Medication use in tobacco withdrawal must be viewed as experimental at this point and will not be discussed in detail in this paper. Nicotine chewing gum has become an accepted treatment since 1984 when used in conjunction with counseling or other treatment programs.³⁰

Poly-drug Abuse: Although a variety of combinations of drugs and alcohol can be abused, it is usually possible to identify the major drug of abuse for which a withdrawal program can be planned, using those principles which have been outlined.¹² Occasionally, there will be a significant combined use of similar types of drugs (e.g., depressant combination such as diazepam and propoxyphene or ethchlorvynol and propoxyphene). Here, one medication, such as diazepam, will generally cover the major withdrawal symptoms of the collateral drug as well, and it is rare-

Drug Detoxification Program Informed Consent for Drug Withdrawal

I, _____ (Name of Patient), am addicted to _____ (Name of drug/drugs and/or alcohol) and wish to undergo a detoxification program for withdrawal from this addiction. I understand that for withdrawal from hard narcotics and from alcohol that I will receive a standardized program of withdrawal, a copy of which will be given to me. For withdrawal from certain other drugs, I agree to come to the clinic in an early state of withdrawal and to take a test dose of a drug in order to establish the size or extent of my habit. (The test drug will be identified for me at the time of my test.) From this data, an individualized detoxification schedule will be formulated for me and I will be given a copy of this planned program.

I understand that all of my symptoms of withdrawal cannot be alleviated without simply continuing my addiction or addicting me to another drug; and I, therefore, expect and am willing to endure a certain amount of discomfort in this withdrawal process. I agree to adhere to the reduction schedule and will not request that its time period be lengthened. I also understand that my medicine will be dispensed daily, requiring that I come to the clinic each day for these medications.

I agree to submit to initial and weekly urine tests. I understand I may be asked to submit to regular blood tests if I have difficulty in cooperating and that failure to demonstrate an appropriate decrease in the blood level of my drug of abuse or the presence of other drugs in my blood or urine will be sufficient reason that I will be dropped from the program and that I would not then be able to reapply for treatment for at least thirty days. I also understand that failure to appear at clinic for two days in a row or for three days in one week will also be reason that I be dropped from the program and cannot reapply for at least thirty days.

I further agree to participate in individual, group, or other therapeutic programs as are prescribed for me and that failure to do so will result in my being dropped from the detoxification program and cannot reapply for at least thirty days.

Signed

Witnessed

Date

FIGURE 1

ly, if ever, necessary to utilize multiple drugs in a withdrawal program except as outlined under the programs for hard narcotics and alcohol.

Monitoring of Detoxification Program

Addicts will request detoxification with three basic motives: 1) a sincere desire to cure their habits, 2) a desire to reduce their habit to an economically manageable level, and 3) a desire to augment their habits with drugs that are supplied at far less expense to them and which are also purer than those obtained on the street.

Because of the third motive, it is necessary to objectify the patient's progress through the detoxification process. Although each of the protocols have been designed so that laboratory results are not a necessary part of the initiation, these procedures can be useful in making decisions concerning the continuation and success of the patient's program. Initial and weekly urine specimens are useful for analysis for the presence of the abused drug as well as for signs of the abuse of other substances.

Should urine samples show the presence of other substances of abuse, these findings can be reason enough for the discontinuation of the detoxification program. An informed consent clearly stating these provisions should be obtained before the addict becomes a patient in the program. *Figure 1* is a sample informed consent for these protocols that the authors have found useful.

Where the patient finds cooperation difficult, blood samples for evaluative levels can be drawn at appropriate intervals and the patient may be informed that failure to show the expected reduction in level levels of the abused drug can be reason for discontinuation of the detoxification program.

If other factors complicate the picture (e.g., pregnancy, physical ailments, psychiatric illnesses, legal difficulties), these problems should be taken into account in modifying the recommendations.

TABLE 6
Brand Name Index

Generic Name	Brand Name	Generic Name	Brand Name
alprazolam	Xanax	methamphetamine	Desoxyn
amitriptyline	Elavil, Endep	methaqualone	Quaalude
benzphetamine	Didrex	methadone	Dolophine
chloral hydrate	Noctec	methylphenidate	Ritalin
chlordiazepoxide	Librium	methpyrilon	Noludar
chlorpromazine	Thorazine	meperidine	Demerol
clonidine	Catapres	naloxone	Narcan
clorazepate	Tranxene	naltrexone	Trexan
desipramine	Norpramin, Pertofrane	oxazepam	Serax
dextroamphetamine	Dexedrine	oxycodone	Percodan
diazepam	Valium	pentazocine	Talwin
diethylpropion	Tenuate	pentobarbital	Nembutal
diphenoxylate	Lomotil	phenmetrazine	Preludin
disulfiram	Antabuse	phenytoin	Dilantin
ethchlorvynol	Placidyl	promethazine	Phenergan
flurazepam	Dalmane	propantheline	Pro-Banthine
glutethimide	Doriden	propoxyphene	Darvon, Darvon-N
haloperidol	Haldol	propranolol	Inderal
hydrocodone	Hycodan, Vicodin	temazepam	Restoril
hydromorphone	Dilaudid	thiothixene	Navane
lorazepam	Ativan	tripelennamine	Pyrabenzamine

Summary

This paper has outlined withdrawal protocols for the types of addicting substances generally encountered in practice. Although total abstinence is the desired goal, even habit reduction is a worthwhile effort since it decreases the amount of crime required to support some habits, lowers the danger from the cuttings and other health hazards, and alleviates to some degree the deprivations of the chemically dependent person's family. Further, even the most chronic of addicts may give up the habit after a number of dose reductions.

Table 6 lists the trade names for all generic designations used in this article.

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Look-Alike and Sound-Alike Drug Names

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Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

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Brand Name:
Generic Name:
Dosage Forms:

Category:
Brand Name:
Generic Name:

Dosage Forms:

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Triazolam
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Modicon, Ortho Pharm.
Ethinyl estradiol-
Norethindrone comb.
Tablets

HALCINONIDE

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Halog, Princeton
Halcinonide
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†See Warnings and Precautions.

Please see brief summary of prescribing information on the next page.

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WARNINGS

- Cardiac Conduction.** CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (six of 1,243 patients for 0.48%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.
- Congestive Heart Failure.** Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt). Experience with the use of CARDIZEM alone or in combination with beta-blockers in patients with impaired ventricular function is very limited. Caution should be exercised when using the drug in such patients.
- Hypotension.** Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.
- Acute Hepatic Injury.** In rare instances, significant elevations in enzymes such as alkaline phosphatase, LDH, SGOT, SGPT, and other phenomena consistent with acute hepatic injury have been noted. These reactions have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in most cases, but probable in some. (See PRECAUTIONS.)

PRECAUTIONS

General. CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes; however, these changes were reversible with continued dosing.

Dermatological events (see ADVERSE REACTIONS section) may be transient and may disappear despite continued use of CARDIZEM. However, skin eruptions progressing to erythema multiforme and/or exfoliative dermatitis have also been infrequently reported. Should a dermatologic reaction persist, the drug should be discontinued.

Drug Interaction. Due to the potential for additive effects, caution and careful titration are warranted in patients receiving CARDIZEM concomitantly with any agents known to affect cardiac contractility and/or conduction. (See WARNINGS.)

Pharmacological studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)

As with all drugs, care should be exercised when treating patients with multiple medications. CARDIZEM undergoes bio-

transformation by cytochrome P-450 mixed function oxidase. Coadministration of CARDIZEM with other agents which follow the same route of biotransformation may result in the competitive inhibition of metabolism. Doses of similarly metabolized drugs, particularly those of low therapeutic ratio or in patients with renal and/or hepatic impairment, may require adjustment when starting or stopping concomitantly administered CARDIZEM to maintain optimum therapeutic blood levels.

Beta-blockers: Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated. Available data are not sufficient, however, to predict the effects of concomitant treatment, particularly in patients with left ventricular dysfunction or cardiac conduction abnormalities.

Administration of CARDIZEM (diltiazem hydrochloride) concomitantly with propranolol in five normal volunteers resulted in increased propranolol levels in all subjects and bioavailability of propranolol was increased approximately 50%. If combination therapy is initiated or withdrawn in conjunction with propranolol, an adjustment in the propranolol dose may be warranted. (See WARNINGS.)

Cimetidine: A study in six healthy volunteers has shown a significant increase in peak diltiazem plasma levels (58%) and area-under-the-curve (53%) after a one-week course of cimetidine at 1,200 mg per day and diltiazem 60 mg per day. Ranitidine produced smaller, nonsignificant increases. The effect may be mediated by cimetidine's known inhibition of hepatic cytochrome P-450, the enzyme system probably responsible for the first-pass metabolism of diltiazem. Patients currently receiving diltiazem therapy should be carefully monitored for a change in pharmacological effect when initiating and discontinuing therapy with cimetidine. An adjustment in the diltiazem dose may be warranted.

Digitalis: Administration of CARDIZEM with digoxin in 24 healthy male subjects increased plasma digoxin concentrations approximately 20%. Another investigator found no increase in digoxin levels in 12 patients with coronary artery disease. Since there have been conflicting results regarding the effect of digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing CARDIZEM therapy to avoid possible over- or under-digitalization. (See WARNINGS.)

Carcinogenesis, Mutagenesis, Impairment of Fertility. A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in *in vitro* bacterial tests. No intrinsic effect on fertility was observed in rats.

Pregnancy. Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal/postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater.

There are no well-controlled studies in pregnant women; therefore, use CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded.

In domestic placebo-controlled trials, the incidence of adverse reactions reported during CARDIZEM therapy was not greater

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than that reported during placebo therapy

The following represent occurrences observed in clinical studies which can be at least reasonably associated with the pharmacology of calcium influx inhibition. In many cases, the relationship to CARDIZEM has not been established. The most common occurrences as well as their frequency of presentation are: edema (2.4%), headache (2.1%), nausea (1.9%), dizziness (1.5%), rash (1.3%), asthenia (1.2%). In addition, the following events were reported infrequently (less than 1%):

Cardiovascular:	Angina, arrhythmia, AV block (first degree), AV block (second or third degree—see conduction warning), bradycardia, congestive heart failure, flushing, hypotension, palpitations, syncope.
Nervous System:	Amnesia, depression, gait abnormality, hallucinations, insomnia, nervousness, paresis, personality change, somnolence, tinnitus, tremor.
Gastrointestinal:	Anorexia, constipation, diarrhea, dyspepsia, dyspepsia, mild elevations of alkaline phosphatase, SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase.
Dermatologic:	Petechiae, pruritus, photosensitivity, urticaria.
Other:	Amblyopia, CPK elevation, dyspnea, epistaxis, eye irritation, hyperglycemia, nasal congestion, nocturia, osteoarticular pain, polyuria, sexual difficulties.

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme, and leukopenia. However, a definitive cause and effect between these events and CARDIZEM therapy is yet to be established.

Issued 6/87

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RADIOLOGY CLINIC

Diminished Vision, Polydipsia and Polyuria in a 5-Year-Old Boy

JAMES R. BOGNANNO, M.D.
Indianapolis

History

A 5-year-old white boy presented seven months prior to admission with poor vision in the left eye and was diagnosed with amblyopia. This was unresponsive to patching, and follow-up examination revealed optic atrophy of the left eye. On further evaluation, a history of 1½ years of vague headaches, polyuria and polydipsia was obtained.

Examination revealed bilateral optic atrophy, left worse than right. He was able to read letters on the right, although could only count fingers to approximately eight feet on the left. The pupils were reactive but slightly sluggish. The remainder of the neurologic and physical examination was unremarkable.

Laboratory evaluation yielded a low serum cortisol of 2.0. T4 was 6.3 and T3RU was 30. Serum sodium and potassium were 143 and 4.2. Serum osmolality was 293. Urine electrolytes: sodium = 67, potassium = 34 and chloride = 25. Roentgenologic evaluation consisted of plain films of the skull (Figure 1), computed tomography (Figure 2a) and magnetic resonance imaging (Figure 2b).

From the Department of Radiology, Indiana University Medical Center, 926 W. Michigan St., Indianapolis 46223.

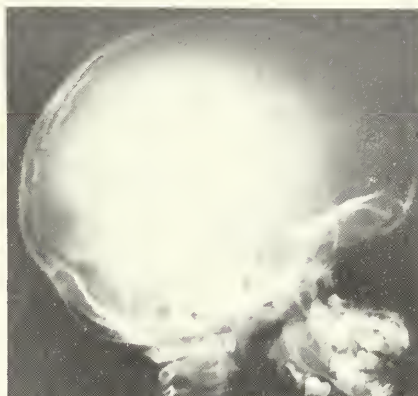


FIGURE 1

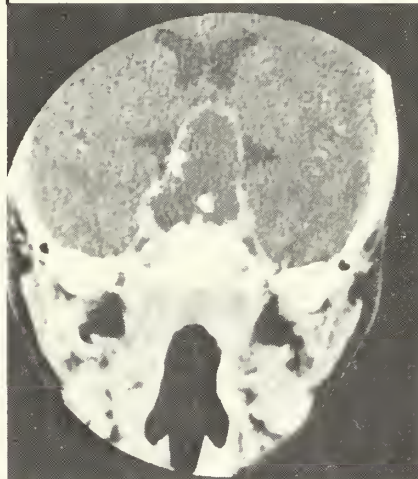


FIGURE 2A

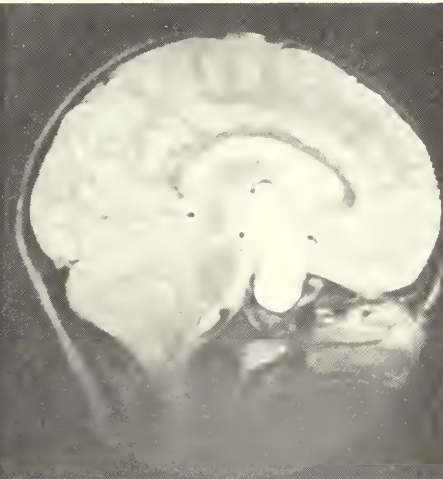


FIGURE 2B

Patient's
Radiographs
on Admission:
What Is
The Patient's
Problem?

SECTION EDITOR:
Robert D. Tarver, M.D.
Director of Chest Imaging
Wishard Memorial Hospital
Indianapolis, Ind.

(Diagnosis and Discussion
on Next Page)

RADIOLOGY CLINIC

Diagnosis

Craniopharyngioma.

On the lateral roentgenogram of the skull (*Figure 1*) there is enlargement of the sella turcica and faint stippled calcifications superior to this. Contrast enhanced coronal CT scan (*Figure 2a*) at the level of the dorsum sella reveals a large cystic mass extending superiorly and effacing the third ventricle. A small amount of calcification and/or contrast enhancement is noted around the periphery of the mass. A sagittal 1.5 Tesla T2 weighted (TR 2000/TE 80) MRI scan reveals the mass extending from the sella turcica superiorly. There is high signal from the tumor cyst with a surrounding low signal intensity ring, which may represent calcified margins of the tumor.

Comment

Craniopharyngiomas have to be considered in the differential diagnosis of nearly all intrasellar and parasellar masses. The clinical presentation is generally due to pressure effects on the pituitary, optic chiasm, hypothalamus and parasellar structures. The incidence of these tumors has been reported to be as high as 12% of all supratentorial neoplasms.

Approximately 70% of these tumors occur in the 1st or 2nd decade with a second peak occurring in the 6th and 7th decades. They are cystic tumors arising from remnants of Rathke's pouch and are lined with squamous and columnar epithelium. They contained desquamated cellular debris, keratin and cholesterol crystals. Calcification is seen in 80% of these lesions in children and 40% in adults. This may

be floccular within the tumor of true lamellar ossification of the tumor periphery. These tumors are usually well defined and are considered pathologically benign although surgical removal has been notoriously difficult. This is because of a reactive gliosis incited by the tumor and microscopic interdigitation of the margins in the surrounding brain tissue. Partial removal of the tumor and drainage of the cyst is the usual surgical treatment.

SUGGESTED READINGS

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Study Reports Success with Lithotripsy

A clinical report from the University of Munich, Germany, published in the Feb. 18, 1988, issue of *The New England Journal of Medicine*, outlines an investigation involving the removal of gallstones from the gall bladder by the administration of chenodeoxycholic acid and other solvents by mouth and the treatment by lithotripsy.

The time involved in each case influenced the number of subjects in whom all signs of stones disappeared;

the longest time of 12 to 18 months produced the largest percentage of relief, namely 91%. This is interesting but

Editorial

will very probably be found in the future to be only temporary.

The specific lesion which is present in all inflammatory gallstone cases is

the chronic inflammation in the mucosa of the gall bladder. Lithotripsy will probably relieve the patient of gallstones in the same manner and for the same lengths of time as was, at one time, accomplished by operation in which the gall bladder was opened for the removal of stones and then left in place. Gallstones almost always reform after this treatment.

It will be most interesting to follow the lithotripsy patients.—FBR

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Mitral Valve Repair for Mitral Regurgitation and Intraoperative Color Flow Echocardiography

JAMES A. TRIPPI, M.D.
PAUL E. SCHMIDT, M.D.
HAROLD HALBROOK, M.D.
Indianapolis

NON-RHEUMATIC MITRAL disease has become recognized as a major cause of pure mitral regurgitation. Mitral insufficiency from connective tissue disorders, pathologic mitral valve prolapse, post-infarction papillary muscle and chordal trauma is relatively common and potentially serious.

The consequences of mitral regurgitation include left ventricular dysfunction, atrial arrhythmias, left atrial enlargement, thromboembolism and pulmonary edema; these untoward consequences of mitral insufficiency have traditionally led to mitral valve replacement. Whereas valvular replacement has prevented further pathologic progression, infrequent but severe morbidity has accompanied the procedure including embolization, anticoagulation hazards, atrial arrhythmias, and prosthetic valvular dysfunction or deterioration. As a result, mitral valvular replacement has been reserved as a treatment option for only relatively advanced disease.

From Methodist Hospital of Indiana, Indianapolis.

Correspondence: James A. Trippi, M.D., Storer and Schmidt and Associates, 3171 N. Meridian St., Suite 200, Indianapolis, Ind. 46208.

In response to the shortcomings of mitral valvular replacement, repair or reconstruction of the mitral valve has become a favorable alternative. Using advanced noninvasive and invasive cardiologic assessment of the function and integrity of the mitral valve, the surgeon can prepare a strategy for mitral valve reconstruction.

Techniques include quadrant resection and reconstruction of the redundant leaflet segments or those leaflet segments with torn chordlets, pericardial patches of leaflet tears, chordal reimplantation, chordal shortening, and annuloplasty (sewing a remodeling ring into the mitral valve forming a new valvular hinge point and support for the repair). These techniques have been in development for some years by cardiovascular surgeons, including Lillehei, Kirkling, Carpentier and Penier, and repair appears to be durable.

The advantages of mitral valvular reconstruction are many. Mitral valve reconstruction carries a lower long-term morbidity and mortality than valvular replacement. Therefore, correction by mitral valve repair can be advocated earlier in the disease process, i.e., before significant left atrial enlargement, left ventricular dysfunction, and the onset of atrial dysarrhythmias arise. The absence of artificial material makes obsolete the need for anticoagulation as in valvular replacements. Exceptions to the need for anticoagulation, however, include situations where sinus rhythm has not been preserved, and the first three postoperative months. Thromboembolism with mitral regurgitation is greatly

reduced with no artificial surfaces, with less atrial enlargement, and when sinus rhythm is present. There may be less likelihood for subsequent endocarditis because of smoother surfaces and more physiologic flow.

In spite of the advantages of mitral valve reconstruction, the procedure has been slow to gain acceptance in part because accurate intraoperative methods of assessing the results of the valve repair have not been available. Because of the dynamic nature of the mitral valve, intraoperative assessments of valvular competency during asystole or partial bypass are an inaccurate prediction of the valvular function; following cardiovascular bypass, auscultation and pressure measurements have been the major surgical means of assessing mitral function prior to chest closure. With these methods of assessing valvular function, Penkoske noted recurrent mitral regurgitation shortly after reconstruction was found in 16% of cases. Carpentier and Lessana recorded a 12% reoperation rate for recurrent mitral regurgitation with a mortality of 25% in those requiring reoperation.

Intraoperative cardiac echo-Doppler color-flow mapping is a more accurate and reliable method of assessing valvular integrity and thus can reduce post-operative morbidity and mortality. Color-flow mapping is a technique that superimposes color upon the entire two dimensional echocardiogram signifying blood flow velocity and direction. Using color-flow mapping, the functional flow and competency of the repaired mitral valve can be assessed. Should significant regurgitation remain after

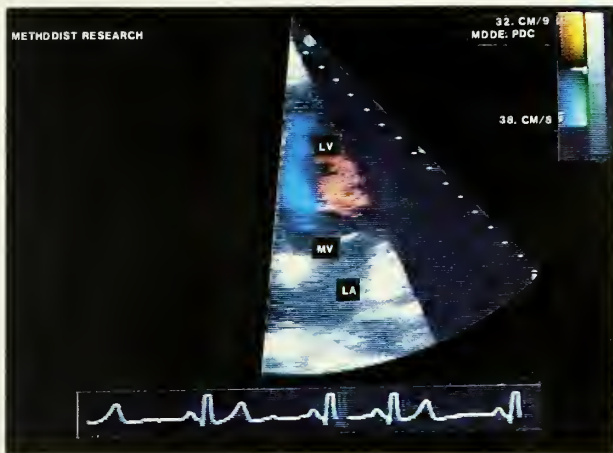


FIGURE 1: Two years post-mitral valve repair without mitral regurgitation during systole, with atrial contraction flow (in red) still entering the left ventricle (LV) and early systolic flow (in blue) exiting the LV.

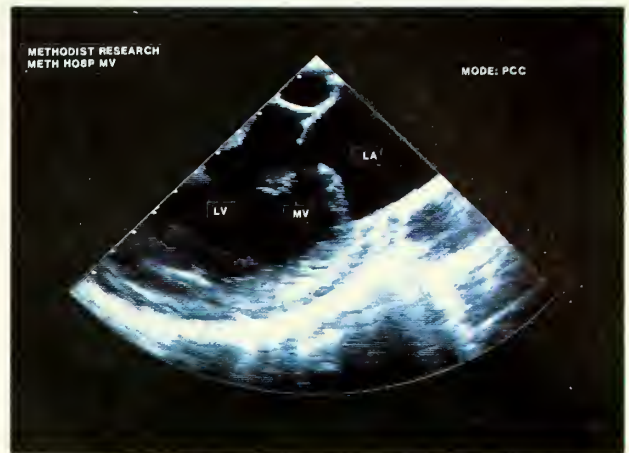


FIGURE 2: Pre-repair mitral valve prolapse and flail of posterior leaflet during systole.

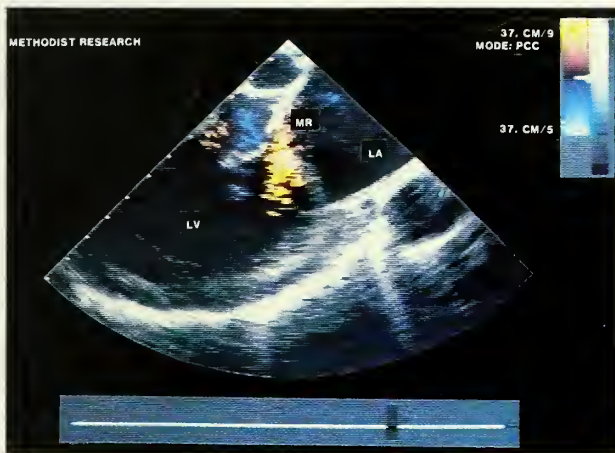


FIGURE 3: Pre-repair mitral valve regurgitation (in yellow and red) eccentrically striking aortic root during systole.

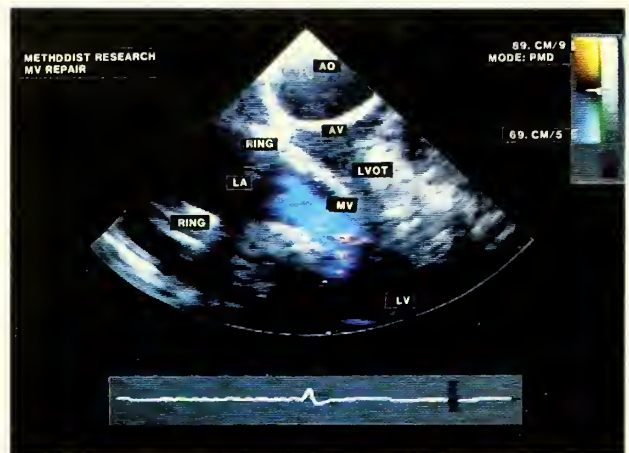


FIGURE 4: Post-repair of mitral valve with normal diastolic flow (in light blue).

ABBREVIATIONS: Ao-aorta, LV-left ventricle, LA-left atrium, LVOT-left ventricular outflow tract, AV-aortic valve, MV-mitral valve, ring-annuloplasty ring.

reconstruction, further repair or valvular replacement can be performed without requiring a second operation.

Other uses of the intraoperative echocardiogram include assessment of left ventricular function, detection of intra-atrial and left ventricular clots or air, instruction and educational purposes, and examination for existence of concomitant cardiac abnormalities.

Most recently, technical advances make intraoperative echocardiography practical, time efficient, and may improve surgical success even further.

Methodist Hospital Experience

Since 1984, 10 cases of mitral valve reconstruction for severe mitral regurgitation have been performed. Six had ruptured chords, three had

ischemic mitral regurgitation, and one had mitral valve prolapse. Quadrant resection was performed in six patients. Transposition of mitral chords was performed in one patient and annuloplasty was achieved on all 10 cases. Follow-up examinations and color-flow studies were performed on all 10 patients (Figure 1).

With a mean follow-up time of 10.5

months (from 2 to 28 months), results showed no resultant mitral regurgitation in one case, trace mitral regurgitation in four cases, mild mitral regurgitation in five cases and moderate mitral regurgitation in one case. Sinus rhythm has been preserved in nine cases, and anticoagulation is no longer required in nine cases. Intraoperative color-flow mapping echocardiography has been performed in the last two cases using direct surface epicardial imaging.

Prerepair (*Figure 2,3*) and immediate post-cardiovascular pump images (*Figure 4*) are examples of recordings produced. Explicit detail of valvular structure and function is possible with epicardial echocardiography and color-flow mapping. Intraoperative color-flow mapping carefully delineated the anatomy of the dysfunctional mitral valves and provided other useful and novel information. Tricuspid regurgitant flow was found but was not severe enough to require tricuspid annuloplasty. Left ventricular function was found to be adequate in myocardial segments that were in question and postoperative mitral regurgitation and stenosis were excluded, allowing final surgical closure to be performed confidently.

There was no additional morbidity associated with performing intraoperative epicardial color-flow mapping echocardiography. Excellent patient instruction and response was also afforded by the intraoperative echo showing the dramatic change between preoperative and postoperative states.

The results presented here of the Methodist Hospital experience suggest that pure mitral regurgitation can be successfully controlled or resolved long-term by mitral valve reconstruction. Intraoperative epicardial echocardiography and color-flow mapping offer an accurate intraoperative method for the surgeon to assess valvular function following mitral valve reconstruction, and allow the opportunity confidently to conclude the operation being assured of a functional success. Afterwards, the images are highly instructive and reassuring to the patient.

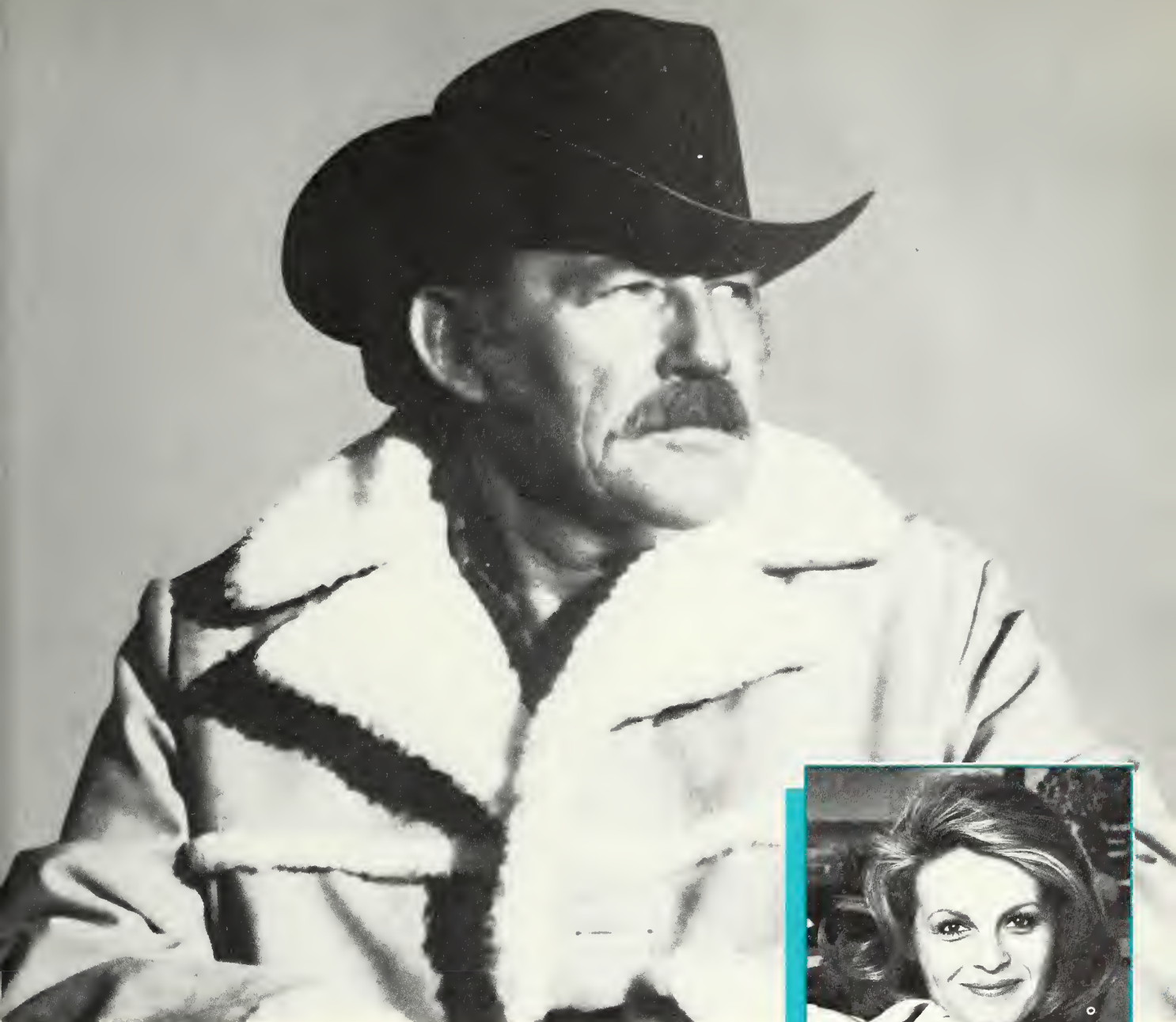
Using this multidisciplinary approach to mitral regurgitation with surgical mitral reconstruction aided by intraoperative color flow mapping echocardiography, we hope to intervene earlier in the disease process and allow for better exercise tolerance, less dyspnea and fewer complications of thromboembolism and atrial dysarrhythmias. As more surgeons are trained

in this technically demanding procedure, the long-term quality of life and survival of patients with severe mitral regurgitation should improve.

The authors wish to express thanks to Dr. Richard Nay and the Showalter Fund of Methodist Hospital for providing the color flow mapping research echocardiograph, and to Lana Hodges for the preparation of this report.

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MUSEUM NOTES ...

CONTINUED FROM PAGE 384

the inscriptions cut on the walls, and sitting on the stone seats about the walls, looked at the tiny one-room log cabin and through the windows at the beautiful view from this hill-top. . . .

"While we sat in the little stone temple, after having read the inscriptions and inspected the cabin, Dr. Wynn called the meeting to order. He had long had a certain project in mind, he said, and he felt that the time was propitious for proposing it. He then read (his) resolution (*Illustration*).

"The resolution was adopted and signed by all present. . . . An organization was soon perfected with Dr. Wynn as president. . . . It was hoped by Dr. Wynn to build up a nation-wide membership, large enough that annual fees would enable the Association to purchase the land and erect the Lincoln memorial. . . . Unfortunately, Dr. Wynn's death occurred almost immediately after the organization of the Association."

On February 12, 1923, the State Legislature appropriated money for the purchase of a tract of land adjoining the graveyard in which Nancy Hanks Lincoln is buried and including the land where the Lincoln home stood.

"The Indiana Lincoln Memorial Association has ceased to exist except in name only. . . . Since Dr. Wynn was the author of the plan, it seems only fair that he be given this tardy tribute, for it was his vision and zeal which first set in motion the machinery to make possible the erection of the memorial to Lincoln, 'Champion of plain people, guardian of the truth.'"



BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate.

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE

There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED

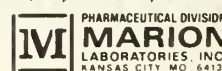
CARAFATE (sucralfate) 1 gm tablets are supplied in bottles of 100 (NDC 0088 1712 47) and in Unit Dose Identification Packs of 100 (NDC 0088 1712 49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other.

Issued 11/87

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Soldier being examined for effects of high-altitude cerebral edema.

“The work I’m doing in the Army Reserve fits perfectly with my academic research interests in civilian life. The Army is very concerned with the effects of high-altitude cerebral edema, which is a mirror model of cerebral hypoxia, something I deal with every day in our neurosurgical intensive care unit. I couldn’t ask for a smoother transition. And that’s true for a lot of Reserve physicians. All we really do is change our clothes, not our mindset.

“Some of the projects the Army is undertaking are on the cutting edge of research. For example, I’m currently involved in developing for the Army a prototype of a non-invasive intracranial pressure-monitoring device that we hope will allow us to measure pressure changes as the brain swells—without drilling holes in the skull. If we can get our design to work, such a device could revolutionize high-altitude medicine as well as civilian neurosurgical care.

“The quality of medicine and the caliber of people I’ve been associated with in the Army Reserve are, without question, equal to civilian hospitals. In fact, I’m giving serious consideration to applying for an active duty academic position in Army Medicine when my residency ends at Massachusetts General.”

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Medical Ethics and the Geriatric Patient: Whether or Not to Resuscitate

JOHN L. STREFLING, M.D.
Logansport

USING INFORMATION FROM published sources, personal interviews, and personal experience, this paper addresses a demanding concept of medical ethics: DNR (do not resuscitate).

We must be concerned with and prepared to address many concomitant problems when structuring a practical application of the concept, DNR. Who should be involved in the decision-making process when choosing a patient/candidate for DNR? Should family members be expected to make the unbiased, unemotional decision of whether or not extraordinary means should be employed to sustain life? (Examples of extraordinary means are respirators, transfusions, intravenous medications, intra-arterial catheters, nasogastric tubes, etc.). Can the patient's physician really be certain of exactly when the diminished quality of life no longer justifies the effort and the expense of sustaining life?

As we know, certain deficits in health and physical functioning accumulate as people grow older due to breakdown or end-stage damage to organ systems, or as a consequence of wear and tear associated with aging and life stress.

We must plan an approach, a methodology, to determine how much medical care the very old patient with irreversible disease is to receive.

By looking at some projections concerning the "graying of America," we find older Americans make up the fastest-growing age group in the United States, and the cost of providing for them in the coming years may be seriously underestimated.

In these times of diminishing and limited resources, restriction of growth, and reorganization of the methods of financing and delivering care, the health care systems must consider and decide on options or alternatives to the idea of "sustain life—the cost is no object."

As intensive care wards continue to receive more and more of the very old with irreversible disease, the burgeoning geriatric population will threaten to overwhelm the existing health care delivery systems.

In the near future, physicians will be forced to provide medical care for increasing numbers of patients in the older age group. Along with the increase in geriatric patients comes the increased potential for ethical problems.

Projections

By the year 2000, 20 to 35% of the U.S. population will be over 65 years of age. A less familiar projection is that, of these older Americans, 44% will be over 75—people likely to be "at risk" and the most susceptible to functional impairment.¹ Brotman projected in 1977 that between 1975 and the year 2000 the over-75 population will increase by 60%.² Individuals 75 years and older, (the "old-old," while those aged 65-75 are the "young-old") will represent 45% of the elderly population.³

The term "older person" is not used

in any precise way in American society. Even if a chronological definition is used, there are many to choose from in published literature. "Older persons" are defined variously from age 55, age 60, age 65 or some other age. In this paper, the use of the phrase "older person" refers to persons 60 or older.

One should not forget that the only feature of older persons as defined here is age. They exhibit the full range of characteristics found in the population as a whole. Most are leading healthy, independent and rewarding lives. The final report of the White House Conference on Aging stated that while "serious problems do exist" among the aged, "the great majority of elderly Americans . . . are the wealthiest, best fed, best housed, healthiest, most self-reliant older population in our history."

The older population has been growing faster than the U.S. population as a whole during the 20th century and is expected to continue growing at a rapid rate through the first third of the next century. It increased in size from 4.9 million in 1900 to over seven times that number (35.6 million) in 1980, while the population under 60 years of age increased at only one-fourth this rate. Current Census Bureau projections indicate that the older population will continue to grow at a faster pace than the rest of the population into the 21st century. The growth rate is expected to slow somewhat around the turn of the next century as the relatively smaller cohorts who were born during the 1930s and the early 1940s reach age 60. However, as persons born during the "baby boom" years reach this benchmark early in the next century, most of the nation's population will occupy the older brackets.

From the Logansport State Hospital, P.O. Box 30, Logansport, Ind. 46947.

Between 1980 and 2030, the total population under 60 is projected to grow about one-fourth, while the older population is expected to more than double in size from 36 to 82 million persons.

While the size of the population 60 and over has increased by over seven times since 1900, the population 75 and over has experienced an elevenfold increase, and the 85+ age group has grown by about 18 times.

In 1983, about one-fourth of the older population was 75 and over, and this proportion was projected to increase over one-third by the year 2030. The 85+ age group now constitutes one in every 16 older persons; by 2030, that group is expected to represent one in every 11.⁴

Neugarten and Havighurst state . . . "by the year 2000 the people over 65 will represent 11.5% of the total population, and the proportion of the over 75 population which is now (1979) 4% will become 5.5% in the year 2000 or will equal 37% of the over 65 population."⁵

The Geriatric Patient

Although the elderly comprise 10% of the population, they use a significant amount of the available health resources. They are currently using about 33% of the available hospital beds in the United States. In the future their increased utilization will increase the demand for space in acute-care hospitals.⁶

When we take a look at the course of fatal illness, we find that much of the information is biased toward chronic illness. But the leading causes of death for the majority of men and women over 65 years of age are: malignancies, pneumonia and heart disease. Even with chronic illness, the terminal period is usually short. Most of these deaths occur in the wards for chronically ill geriatric patients. A national survey (Hinton, 1976) reached the following conclusions: Between 75 and 80% of terminally ill patients died within three months of their last ad-

Selected Statutory Provisions
and Cases Related to Euthanasia

CALIFORNIA

Statutory Provisions

Cal. Health & Safety Code, 7185 et seq. (1981 Supp.) ["Natural Death Act"]; statutes of 1978, ch. 1324 [pilot hospice program].

Selected Cases

In re Phillips B., 92 Cal. App. 3d 796, 156 Cal. Rptr. 48 (1979), cert. denied sub nom, Bothman v. Warren B., 445 U.S. 949 (1980) [cardiac surgery not ordered for minor with Down's Syndrome]. Custody of the child was later transferred from the parents who had refused the surgery, guardianship of Phillip Becker, 50 U.S.L.W. 2133 (Cal. Super. Ct., Santa Clara Co., 1981).

In re Benjamin C., No. J914419 (Super Ct., Los Angeles Co., Cal, February 15, 1979) [court authorized discontinuance of life support of irreversibly comatose minor].

In re Young, 48 U.S.L.W. 2238 (Super. Ct. Orange Co., Cal., September 11, 1979) [court authorized discontinuance of life support of irreversibly comatose adult].⁹

FLORIDA

Statutory Provisions

Fla. Stat. Ann. 381.494 and 400.601 to 400.615 (1980 Supp., as amended by Laws 1980, ch. 80-14 and Laws 1981, ch. 81-259, 256 and ch. 81-271) [hospices].

Satz v. Permuter, 379 So. 2d 359 (Fla. 1980), appearing 362 So. 2d 160 (Fla. App. 1978) [court authorized withdrawal of life support at request of terminally ill competent adult].

mission to the hospital. For patients with cancer, the terminal, painful part of the illness lasted approximately six weeks. The nature of the illness is important in determining the length of the terminal phase. On the whole, it is the sudden, serious disorder of blood vessels that kills most quickly.

In summary, although some elderly are struck down suddenly and a small portion have months of personal illness, the majority will have a terminal period lasting a few days to a week and, occasionally, depending on the disease, exceeding three months.⁷

Legal Aspects

The question of cessation of extraordinary measures (i.e., discontinuance of

transfusions, respirators, intravenous lines, feeding, etc.) has been argued in court. In some cases, the court has allowed discontinuance; in other cases, the court has said no.

Questions also arise involving "No Code" orders by physicians for patients who are terminally ill. "No Code" orders mean that in the event of a cardiac or respiratory arrest, no resuscitative measures should be employed. In some states, "No Code" orders are considered a form of homicide. In certain circumstances, the local district attorneys have taken action. However, other states have acknowledged the validity of "No Code" orders in cases involving terminally ill patients where no objections to such orders are made by the patient's family.

NEW YORK

Statutory Provisions

N.Y. Public Health Law 2801(10) (1980-81 Supp.) [definition of hospice — for implementing regulations, see N.Y.C.R.R. 432.1, 790.1 et seq. and 791.1 et seq. (1979)].

Selected Cases

In re Vasco, 258 App. Div. 128, 263 N.Y.S. 552 (1933) [surgery ordered for child with life-ending angering condition despite parental religious objection].

Erickson v. Delgard, 44 Misc. 2d 27, 252 N.Y.S.2d 705 (1962) [competent adult may refuse life saving transfusion].

Collins v. Davis, 44 Misc. 2d 622, 254 N.Y.S.2d 666 (1964) [life-saving surgery ordered for comatose adult despite spouse's objections].

Petition of Nemsea, 51 Misc. 2d 616, 273 N.Y.S.2d 624 (1966) [court declined to order life-extending amputation of gangrenous foot where incompetent patient did not want amputation and there was disagreement among her sons].

Matter of Melides, 88 Misc. 2d 974, 390 N.Y.S.2d 523 (1976) [competent adult who is not pregnant and has no children may refuse life-saving transfusions].

Matter of Hofbauer, 47 N.Y.2d 648, 393 N.E.2d 1009 (1979) [court declined to order modification of child's unorthodox therapy that parents were providing with the concurrence of a licensed physician].

Application of Cicero, 101 Misc. 2d 699, 421 N.Y.S.2d 965 (1979) [court ordered surgical correction of meningocele associated with newborn's spina bifida despite parental objections].

Matter of Storar, 52 N.Y.2d 363, 438 N.Y.S.2d 266, 420 N.E.2d 64 (1981) [Eichner case-competent adult's prior refusal of life support equipment should be honored; Storar case—mother may not refuse feeding and transfusions for terminally ill incompetent adult son].¹⁰

Neurological Death

Many physicians, fearful of court or criminal action, have been requesting a legal definition of death.⁸

The American Medical Association published a report that was developed to clear up the ambiguity of the definition of death. The report eventually became known as the Harvard Criteria of Neurological Death. The following criteria have since been adopted by many hospitals, with minimal revisions, to indicate the occurrence of neurological death:

1. The patient must be in a deep, unresponsive coma, and there must be no appropriate response by any stimulus.

2. The patient must be apneic and must not recover spontaneous

respiratory function after the respirator has been turned off for ten minutes according to the following procedure: The respirator is turned off, and an oxygen catheter is placed either in the tracheostomy or in the endotracheal tube for delivery of oxygen at 6 liters per minute. There shall be sufficient diffusion of oxygen for an apneic patient to be adequately oxygenated during this period of time. Ten minutes is required in order to ensure that the PCO₂ rises above the normal level required for respiratory drive.

3. There must be no reflexes.

- a. The pupils must be fixed and dilated and must not respond to a direct source of bright light.

- b. External ocular movements (in response to head turning and to irriga-

tion of the ears with ice water) must be absent.

- c. Blinking must be absent.

- d. There must be no evidence of postural activity (decerebrate or other).

- e. Swallowing, yawning and vocalization must be absent.

- f. Planter responses must be absent.

- g. The tendon reflexes are generally absent, but since these require only spinal arc, a rudimentary response may be noted.

4. Flat electroencephalogram (EEG) should be recorded for 10-20 minutes at 25 microvolts/0.5 cm. One channel should record the EEG. No cerebral activity should be recorded during this time. The EEG must be interpreted by a board-certified neurologist.

5. All of the above tests should be determined on two occasions at least 24 hours apart.

6. Their results are only valid if hypothermia and drug intoxications (barbiturates, curare, etc.) have been excluded.

7. The validity of the results is not negated by normal circulation and blood pressure.

8. Death must be certified by the attending physician and one other physician.

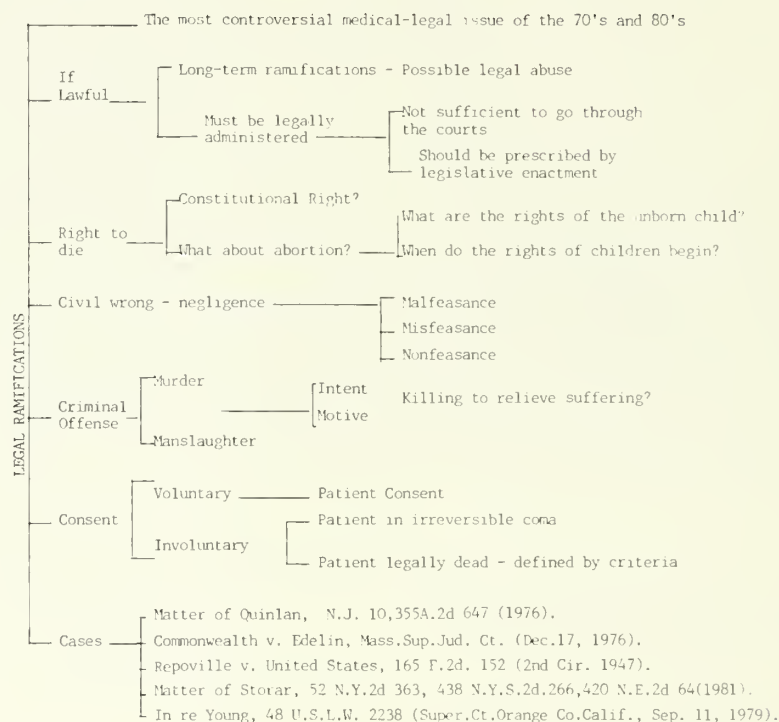
Euthanasia

Webster's definition of euthanasia is: the painless putting to death of persons suffering from incurable diseases.

Today, the term "euthanasia" is being used to mean "good death" (e.g., the patient's own natural death without unduly prolonging his dying process) as well as to mean mercy killing, which has nothing to do with the original intent of the word "euthanasia." As one can readily see, there is a great difference between allowing someone to die his or her own death, without artificially prolonging the dying process, as opposed to killing the patient by administering an overdose to "put them out of their misery" or to "relieve them of their suffering."

At present, there are no statutes in the U.S. legalizing euthanasia.

Ramifications of Euthanasia



A complete discussion of euthanasia listing all of the details is beyond the scope of this paper. The accompanying chart shows some of the many ramifications of euthanasia.

Arguments

Those who argue in favor of discontinuance of life-support systems force us to consider the patient whose disease is irreversible. What should one do when you have a long-term unconscious terminal patient? If a terminally ill patient is "beyond medical help," should he have the right to refuse additional medical help or to refuse medication?

How does one deal with the patient who just does not want to live any more, who no longer achieves any pleasure or satisfaction from life because he is paralyzed from head to toe, aphasic, who may just lie in bed for years, fully conscious, but tube-fed, unable to communicate except to smile or cry?

Some cancer patients live for months with tremendous pain, unable to move, dependent on others to turn them, change their positions, feed them and take care of their other needs. While in the hospital, they have the added worry of the terrible expenses. They know the outcome, and they just don't want to live any longer. Why should a geriatric terminally ill patient, "beyond medical help," continue to occupy a bed in a sophisticated unit with a limited bed capacity?

Shouldn't our limited resources be better used by saving the patients who can be helped?

However, others say that it is the role of the physician to preserve and prolong life, no matter what. There are some physicians who cannot accept the death of a patient. The physician may have the need to prolong life when others feel it is unnecessary. Some physicians defend their actions by responding that they can't really say what the patient feels or enjoys. Who can say, with certainty, what course a disease will take? Some physicians say

the family members may suffer guilt feelings if death is not postponed. Immediate family members may present a problem by "hanging on" and refusing to "let go." Who has the right to decide when a life is meaningless to us? Do we have the right to shorten that "meaningless" life?

Conclusions

Before the 1980s, it had been presumed that the health care system would always be encouraged to grow and expand, both in size and complexity, and that there would always be sufficient resources to suggest that expansion.

Now it appears that the limits of our resources are being approached. In the near future, as our health care system faces the possibility of being overwhelmed by the geriatric terminal patient, we will be forced to consider new options or alternatives to unrestricted growth and expansion.

Energies within the health care industry have already become focused less on the development of new services or on the expansion of coverage and more on the control of costs through limitations and reductions.

The challenge to administrations, providers, planners and policymakers is creativity: to generate more cost-effective approaches to the use of scarce resources.

I submit to you that, in the future, hospitals will be right in the middle of the ethical dilemma of whether to resuscitate or DNR (do not resuscitate). As community or quasi-public institutions heavily dependent on public dollars, hospitals are open systems, subject to influence from outside, and therefore susceptible to the efforts of community groups and external agencies to use them as instruments of social change, to include making ethical policy decisions and health system reform.

These life or death ethical decisions should be a group effort. The group should consist of a physician, an immediate family member, a religious

representative from a church or temple, a social worker or ethicist, and an attorney.

I believe as Erich Fromm does, when he says: "I think there is no such thing as medical ethics. There are only universal human ethics applied to specific human situations."¹²

It is this humanistic conscience, referring to the philosophic religious humanistic tradition, which has to be our guide in every difficult case. We must always put ourselves in the situation of the patient first, then consider the family's and the staff's needs, because all of these will influence our final decision.

In the case where a patient is competent and able to tell us his wants and needs, then of course his requests should be honored. But in the case of an incompetent, unconscious patient, a joint decision should be made. The joint decision to discontinue life-support procedures does not rule out nutrients, fluids or antibiotics, but it does preclude the use of extraordinary means to sustain life (e.g., emergency measures for shock, resuscitation, arterial lines and catheters, transfusion, etc.).

A policy should be written containing precise guidelines that are universally acceptable, satisfying religious, moral, legal, professional and cultural requirements.

This policy program should apply equally to all patients and should not be thought of as "euthanasia," bearing in mind that the consensus of the group is the discontinuance of all extraordinary measures of life support when there is no longer hope and all other alternatives have been rejected.¹³

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Book Review: Handbook of Living Will Laws

Published by the Society for the Right to Die, 250 W. 57th St., New York, N.Y. 10107. Copyright 1987. Softcover, 152 pages, \$8. (Reviewed by W.D. Snively, Jr., M.D., Evansville)

"Living Will" legislation has seen such rapid growth in recent years that only 12 of the states still lack these laws. The years 1985-86 saw an acceleration in lawmaking that exceeded any other period in the history of "Living Will" legislation.

In the *Handbook of Living Will Laws*,

1987 edition, published by the Society for the Right to Die, the term "Living Will" is applied to legislation described by such terms as "natural death," "death with dignity," "right to die."

The *Handbook* covers the recent legislation, court decisions interpreting statutes, other right to die developments, the Uniform Act of the National Conference of Commissioners on Uniform State Laws, and commentaries on recent laws and amended statutes.

Most useful for those from various regions are the texts of all 39 "Living

Will" laws. Also presented are the Uniform Rights of the Terminally Ill Act with prefatory notes and comments. The *Handbook* finishes with an appendix of citations of right to die court decisions.

Available as a supplement to the *Handbook*, or separately, is a checklist chart of "Living Will" laws. The chart, in addition to tabulating the characteristics of all 39 "Living Will" laws, summarizes common provisions not noted on the chart.

Common Myths About Sleep and the Elderly

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AS A SLEEP DISORDERS specialist, I encounter many misconceptions about sleep that concern elderly patients in particular—perhaps because they're the group most likely to suffer from sleep disorders.

Some common misconceptions about sleep and older people include the following:

Myth #1: As we grow old, we need less sleep than we did when we were younger.

Fact: The elderly may get less sleep, but their individual needs for a specific amount are relatively constant. As the body ages, the quality of sleep deteriorates. Sleep becomes less efficient and is often light and unrestful. By age 50 for men and 60 for women, sleep is usually devoid of the two deepest stages, those considered to be the most refreshing and restorative.

While the elderly are the group most prone to sleep problems, many of these difficulties can and should be treated.

Myth #2: Napping during the day will not interfere with sleeping at night.

Fact: Insomnia is often exacerbated by taking naps during the day. Napping almost always decreases the quality and quantity of nighttime sleep. Poor sleepers who catnap during the day also find that it usually takes

longer to fall asleep at night. In rare cases, however, those who suffer from very severe insomnia may be too exhausted to fall asleep at night unless they have had a nap. For these people, sleep experts recommend taking a nap regularly at the same time each day.

Myth #3: A nightcap before bed is a good sleep aid.

Fact: In the long run, alcohol makes sleep worse, not better. Although a shot of whiskey or a glass of wine may relax the weary insomniac enough to fall asleep, once the alcohol is metabolized, the body enters a state of withdrawal. The result is frequent awakenings and a drop in the overall quality of sleep.

Myth #4: Snoring may be annoying, but it is not dangerous.

Fact: Snoring is no trivial matter. It almost always indicates that something is wrong with breathing during sleep. A particular pattern of very loud snoring accompanied by pauses in breathing that last from 20 to more than 100 seconds is a sign of a potentially life-threatening condition called *sleep apnea*. Sleep apnea tends to occur most often in elderly or overweight men and has been linked to high blood pressure, heart attacks and strokes. A 1987 study found that apnea occurred during sleep in 38% of the male patients over the age of 60 in the Veterans Administration Medical Center at San Diego, Calif.

Anyone may have occasional brief pauses in breathing during the night. Those with sleep apnea, however, stop breathing more than five times each hour, up to a minute or longer each time, and often wake up gasping for breath. (Individuals with sleep apnea should consult their physicians about taking sleep medications or drinking

alcohol in the evening, as these substances may make their breathing difficulties worse.)

Myth #5: Sleep medications available over the counter are safer than prescription drugs.

Fact: Nonprescription sleeping pills are not innocuous. Their active ingredient is antihistamine, which can produce disturbing side effects, including disorientation, dizziness, ringing in the ears, poor coordination, blurred or double vision and irritability. In addition, some antihistamines are long-acting and may produce carryover drowsiness the next day.

Myth #6: Sleeping pills are never safe for elderly people.

Fact: While there is no perfect sleep medication, the National Institute of Mental Health has recommended the benzodiazepine group as the sleep medications of choice, emphasizing that elderly patients in particular should be prescribed the smallest effective doses for the shortest period of time.

Within the benzodiazepine group, however, those that are more rapidly eliminated from the body have been shown to be generally safer for elderly people. Triazolam (Halcion), for example, produces less drowsiness the next day than do longer-acting sleep medications. A recent study found that long-acting benzodiazepines may make elderly patients more likely to fall and suffer hip fractures. No such increase in falls was detected when patients received short-acting sleep medications.

The need for daytime alertness should be a major consideration whenever sleep medications are prescribed—particularly for the elderly to whom a fall can be a life-threatening event.

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POST-POLIO SYNDROME

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WITH THE INTRODUCTION of the polio vaccine in the mid 1950s, acute poliomyelitis has become rare in the United States. Most survivors of polio today are 30 years old or greater. Most survivors have returned to normal lives. Some have been left with varying amounts of muscle weakness, atrophy and joint deformities. The polio survivors have adapted to minimize their residual handicaps. These residual impairments of acute polio were long considered to be stable.

In recent years it has become obvious that many "post-polios" are experiencing new problems and impairments.¹ These problems include severe fatigue, increased weakness, atrophy, cold intolerance, breathing problems and pain. The term "post-polio syndrome" is used to describe the variety of new problems thought to be the result of the late effects of polio.² The *Table* summarizes these new health problems affecting the post-polio population.

Many researchers have begun to study these new symptoms being experienced by post-polios. There is a population of survivors found to be more likely to experience these new problems. The following factors present at the time of the acute polio make a survivor more likely to experience the post-polio syndrome: 1) Being hospitalized at the time of acute polio; 2) Being over 10 years of age at the

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TABLE
Most Frequent New Health and ADL Problems*
Since Achieving Maximum Recovery

New Health Problems	Percent with Problems
1. Fatigue	87.1
2. Weakness in previously affected muscles	86.8
3. Muscle pain	79.5
4. Joint pain	79.3
5. Weakness in previously unaffected muscles	76.8
6. Breathing difficulties	58.5
New ADL + Problems	
1. Walking (N = 223)	84.9
2. Climbing stairs (N = 223)	82.5
3. Transfers (N = 286)	63.0
4. Dressing (N = 539)	62.2

*ADL = activities of daily living.

+Numbers in parentheses are respondents at risk for that problem. (3)

onset of polio; 3) Being on a ventilator, and 4) Having paralytic involvement of all four extremities.³ Based on the study by Halstead, this decline in health status occurs 30-40 years following the acute attack of polio.⁴ Another study has shown that approximately 23% of polio survivors will experience new health problems related to their polio.⁵

We have been seeing post-polios in our clinic since March 1986. Our results agree with those found by the researchers cited above. The most worrisome symptom of post-polio found in our clinic is the progression of weakness in previously stable or unaffected muscles. The specific medical term used to describe the progressive

muscular weakness from new death or dysfunction of motor units seen in polio survivors is progressive post-polio muscular atrophy.²

The exact etiology of post-polio symptoms, especially progressive weakness, remains unknown. Recrudescence of a latent virus was one of the early theories proposed.⁴ Premature death of anterior horn cells or failure of the neuromuscular junction has also been mentioned.^{4,6} Simply stated, post-polios have decreased numbers of functioning anterior horn cells. They may be damaged and are doing all of the work of those units killed by the acute polio. Some anterior horn cells will die due to normal aging and the few remain-

ing units may not be able to keep up the high metabolic demand imposed upon them. The final result may be the onset of slowly progressive weakness in a small number of post-polios.

The problems experienced by people with post-polio should not be excused by their physicians as insignificant or factitious. Muscle weakness, fatigue or breathing problems can also be due to other causes such as hypothyroidism, diabetes or emphysema. Pain in muscle and joints can be due to arthritis, nerve entrapments or muscle diseases. Each patient suspected of having post-polio syndrome needs to be examined by a physician experienced in this area. After all other diagnoses are excluded, the diagnosis of post-polio syndrome can be made and a treatment plan formulated.

Each of the symptoms of this syndrome needs to be examined separately. Marked fatigue after moderate exercise or overcoming fatigue late in the afternoon is one of the common late effects of polio. Fatigue is a problem experienced by millions of people and is not exclusively indicative of polio. When fatigue appears in a post-polio, activity should be modified and a rest period should be incorporated into a daily routine. Daily work duties may need to be significantly modified to keep the fatigue manageable.

Progression of weakness in previously stable or unaffected muscles is one of the most frightening late effects of polio. Post-polios struggle to become "normal" by using braces and crutches and when progression of weakness jeopardizes their current ambulation status, the fear is often devastating. We have found that if progressive weakness occurs, it is usually only slight and very gradual. The change in functional status usually means a cane needs to be added for safe gait or stairs eliminated from the daily routine.

Back pain is experienced by 80% of the population, and post-polios are no exception. They also experience joint pain and a deep muscle pain. Post-polios are even more susceptible to



FIGURE 1



FIGURE 2

back pain because of weak abdominal muscles. Abnormal body mechanics also contribute to the development of pain. This pain can usually be decreased by changing the gait pattern, decreasing strenuous activities and by using non-steroidal anti-inflammatory medications.

Breathing problems can also be present in post-polios without significant warning signs. They have limited respiratory reserve secondary to weakened breathing muscles. Symptoms of decreasing respiratory reserve are fatigue, anxiety, restless sleep and confusion. Any post-polio experiencing these symptoms should have pulmonary functions done. It has also been suggested that any post-polio

undergoing surgery should at least have simple screening pulmonary studies before undergoing anesthesia.

Many post-polios can also be dramatically helped by the recent advances in orthotics. There are new lightweight plastic materials available for braces. The first case study illustrates how a polio patient can be helped by these new light-weight braces.

Case Study 1 (See Figure 1 and 2)

A 40-year-old man presented to the clinic with complaints of bilateral leg weakness. He had a flaccid right leg with weakness of the dorsiflexors in his left leg. He was using a heavy full-leg metal brace. He was fitted with a light-weight brace with an offset knee and

hinged ankle. He had polio at age 3 that only involved his legs and trunk. He was not experiencing aching in his muscles or progressive weakness.

Case Study 2

We evaluated a 38-year-old woman who had paralytic involvement of all four extremities at age 4. She was hospitalized for eight months at the time of her acute polio. She did recover enough to walk short distances without braces or ambulation aids. Over the last five years, she has noted progressive weakness in her legs and arms. She had to go back to a long leg brace and gets noticeably fatigued when she walks. She was diagnosed with post-polio syndrome and progressive post-polio muscular atrophy.

It was recommended that she use a wheelchair for long distances to save her energy for activities requiring standing. She was also started on a non-steroidal anti-inflammatory medication.

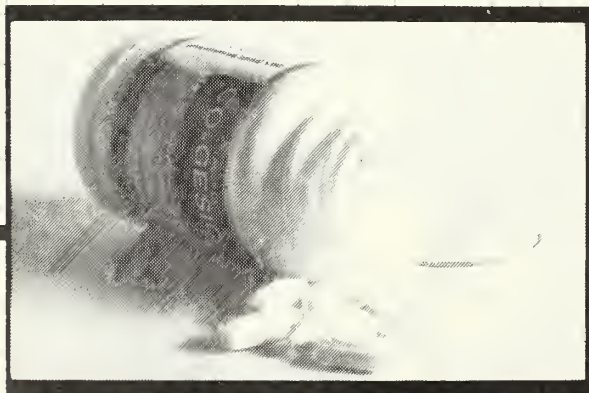
These cases help to illustrate that the polio patient will continue to have health problems that need to be addressed. Approximately 25% of these people will experience post-polio syndrome and will need to seek diagnosis and treatment as well as support. Primary care physicians need to be aware of and empathetic to the needs of the post-polio population.

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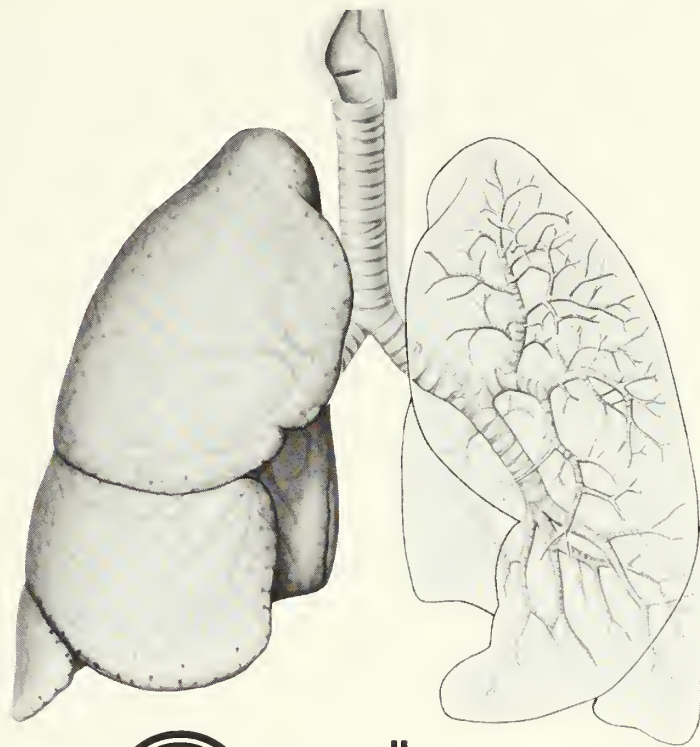


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Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Summary. Consult the package literature for prescribing information.

Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β -hemolytic streptococci).

Contraindication:
Known allergy to cephalosporins.

Warnings:

CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients. Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] or the above skin manifestations accompanied by arthritis/arthritis and, frequently, fever): 1.5%; usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nerv-

ousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported. • Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis: elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinistix[®] tablets but not with Tes-Tape[®] (glucose enzymatic test strip, Lilly).

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- Be aware of your child's weight in comparison to medically accepted norms for his or her age and size.

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- Overpowers
- Persists

Bactrim penetrates all tissues¹ to overpower most common susceptible uropathogens including *E. coli*, *Klebsiella* species, *Enterobacter* species, *Morganella morganii*, *Proteus* (in vitro) year after year.² B.i.d. dosing, easy transition from IV to oral, and economy help keep successful therapy within your power. Especially when you remember to protect your prescribing decision by specifying D.A.W.

Please note that *in vitro* data may not correlate with clinical experience. Bactrim is contraindicated in infants less than two months of age, in pregnancy at term, during lactation, and in documented megaloblastic anemia due to folate deficiency. Maintain adequate fluid intake.

Specify *"Dispense as written"*

Bactrim™ DS

(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

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Please see references and summary of product information on following page.



Specify "Dispense as Written," "Do Not Substitute," or "Brand Necessary" according to your state regulations.

BactrimTM

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows

CONTRAINDICATIONS: Hypersensitivity to trimethoprim or sulfonamides, documented megaloblastic anemia due to folate deficiency, pregnancy at term and during the nursing period, infants less than two months of age.

WARNINGS: FATALITIES ASSOCIATED WITH THE ADMINISTRATION OF SULFONAMIDES, ALTHOUGH RARE, HAVE OCCURRED DUE TO SEVERE REACTIONS, INCLUDING STEVENS-JOHNSON SYNDROME, TOXIC EPIDERMAL NECROLYSIS, FULMINANT HEPATIC NECROSIS, AGRANULOCYTOSIS, APLASTIC ANEMIA AND OTHER BLOOD DYSCRASIAS.

BACTRIM SHOULD BE DISCONTINUED AT THE FIRST APPEARANCE OF SKIN RASH OR ANY SIGN OF ADVERSE REACTION. Clinical signs, such as rash, sore throat, fever, arthralgia, cough, shortness of breath, pallor, purpura or jaundice, may be early indications of serious reactions. In rare instances a skin rash may be followed by more severe reactions, such as Stevens-Johnson syndrome, toxic epidermal necrolysis, hepatic necrosis or serious blood disorder. Perform complete blood counts frequently. **BACTRIM SHOULD NOT BE USED IN THE TREATMENT OF STREPTOCOCCAL PHARYNGITIS.** Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have a greater incidence of bacteriologic failure when treated with Bactrim than with penicillin.

PRECAUTIONS: General: Give with caution to patients with impaired renal or hepatic function, possible folate deficiency (e.g., elderly, chronic alcoholics, patients on anticonvulsants, with malabsorption syndrome, or in malnutrition states) and severe allergies or bronchial asthma. In glucose-6-phosphate dehydrogenase deficient individuals, hemolysis may occur, frequently dose-related.

Use in the Elderly: May be increased risk of severe adverse reactions in elderly, particularly with complicating conditions, e.g., impaired kidney and/or liver function, concomitant use of other drugs. Severe skin reactions, generalized bone marrow suppression (see WARNINGS and ADVERSE REACTIONS) or a specific decrease in platelets (with or without purpura) are most frequently reported severe adverse reactions in elderly. In those concurrently receiving certain diuretics, primarily thiazides, increased incidence of thrombocytopenia with purpura reported. Make appropriate dosage adjustments for patients with impaired kidney function (see DOSAGE AND ADMINISTRATION).

Use in the Treatment of *Pneumocystis Carinii* Pneumonia in Patients with Acquired Immunodeficiency Syndrome (AIDS): AIDS patients may not tolerate or respond to Bactrim in same manner as non-AIDS patients. Incidence of side effects, particularly rash, fever, leukopenia, elevated aminotransferase (transaminase) values, with Bactrim in AIDS patients treated for *Pneumocystis carinii* pneumonia reported to be greatly increased compared with incidence normally associated with Bactrim in non-AIDS patients.

Information for Patients: Instruct patients to maintain adequate fluid intake to prevent crystalluria and stone formation.

Laboratory Tests: Perform complete blood counts frequently, if a significant reduction in the count of any formed blood element is noted, discontinue Bactrim. Perform urinalyses with careful microscopic examination and renal function tests during therapy, particularly for patients with impaired renal function.

Drug Interactions: In elderly patients concurrently receiving certain diuretics, primarily thiazides, an increased incidence of thrombocytopenia with purpura has been reported. Bactrim may prolong the prothrombin time in patients who are receiving the anticoagulant warfarin. Keep this in mind when Bactrim is given to patients already on anticoagulant therapy and reassess coagulation time. Bactrim may inhibit the hepatic metabolism of phenytoin. Given at a common clinical dosage, it increased the phenytoin half-life by 39% and decreased the phenytoin metabolic clearance rate by 27%. When giving these drugs concurrently, be alert for possible excessive phenytoin effect. Sulfonamides can displace methotrexate from plasma protein binding sites, thus increasing free methotrexate concentrations.

Drug/Laboratory Test Interactions: Bactrim, specifically the trimethoprim component, can interfere with a serum methotrexate assay as determined by the competitive binding protein technique (CBPA) when a bacterial dihydrofolate reductase is used as the binding protein. No interference occurs if methotrexate is measured by a radioimmunoassay (RIA). The presence of trimethoprim and sulfamethoxazole may also interfere with the Jaffe alkaline picrate reaction assay for creatinine, resulting in overestimations of about 10% in the range of normal values.

Carcinogenesis, Mutagenesis, Impairment of Fertility: **Carcinogenesis:** Long-term studies in animals to evaluate carcinogenic potential not conducted with Bactrim. **Mutagenesis:** Bacterial mutagenic studies not performed with sulfamethoxazole and trimethoprim in combination. Trimethoprim demonstrated to be nonmutagenic in the Ames assay. No chromosomal damage observed in human leukocytes *in vitro* with sulfamethoxazole and trimethoprim alone or in combination, concentrations used exceeded blood levels of these compounds following therapy with Bactrim. Observations of leukocytes obtained from patients treated with Bactrim revealed no chromosomal abnormalities. **Impairment of Fertility:** No adverse effects on fertility or general reproductive performance observed in rats given oral dosages as high as 70 mg/kg/day trimethoprim plus 350 mg/kg/day sulfamethoxazole.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefit justifies potential risk to fetus.

Nonteratogenic Effects: See CONTRAINDICATIONS section.

Nursing Mothers: See CONTRAINDICATIONS section.

Pediatric Use: Not recommended for infants under two months (see INDICATIONS and CONTRAINDICATIONS sections).

ADVERSE REACTIONS: Most common are gastrointestinal disturbances (nausea, vomiting, anorexia) and allergic skin reactions (such as rash and urticaria). **FATALITIES ASSOCIATED WITH THE ADMINISTRATION OF SULFONAMIDES, ALTHOUGH RARE, HAVE OCCURRED DUE TO SEVERE REACTIONS, INCLUDING STEVENS-JOHNSON SYNDROME, TOXIC EPIDERMAL NECROLYSIS, FULMINANT HEPATIC NECROSIS, AGRANULOCYTOSIS, APLASTIC ANEMIA AND OTHER BLOOD DYSCRASIAS (SEE WARNINGS SECTION).**

Hematologic: Agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, neutropenia, hemolytic anemia, megaloblastic anemia, hypoprothrombinemia, methemoglobinemia, eosinophilia. **Allergic Reactions:** Stevens-Johnson syndrome, toxic epidermal necrolysis, anaphylaxis, allergic myocarditis, erythema multiforme, exfoliative dermatitis, angioedema, drug fever, chills, Henoch-Schoenlein purpura, serum sickness-like syndrome, generalized allergic reactions, generalized skin eruptions, photosensitivity, conjunctival and scleral injection, pruritus, urticaria and rash. Periarthritis nodosa and systemic lupus erythematosus have been reported. **Gastrointestinal:** Hepatitis (including cholestatic jaundice and hepatic necrosis), elevation of serum transaminase and bilirubin, pseudomembranous enterocolitis, pancreatitis, stomatitis, glossitis, nausea, emesis, abdominal pain, diarrhea, anorexia. **Genitourinary:** Renal failure, interstitial nephritis, BUN and serum creatinine elevation, toxic nephrosis with oliguria and anuria, crystalluria. **Neurologic:** Aseptic meningitis, convulsions, peripheral neuritis, ataxia, vertigo, tinnitus, headache. **Psychiatric:** Hallucinations, depression, apathy, nervousness. **Endocrine:** Sulfonamides bear certain chemical similarities to some goitrogens, diuretics (acetazolamide and the thiazides) and oral hypoglycemic agents, cross-sensitivity may exist. Diuresis and hypoglycemia have occurred rarely in patients receiving sulfonamides. **Respiratory:** Pulmonary infiltrates. **Musculoskeletal:** Arthralgia, myalgia. **Miscellaneous:** Weakness, fatigue, insomnia.

DOSAGE AND ADMINISTRATION: Not recommended for use in infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOIDIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN: Usual adult dosage for urinary tract infections is one DS tablet, two tablets or four teaspoonfuls (20 ml) b.i.d. for 10 to 14 days. Use identical daily dosage for 5 days for shigellosis. Recommended dosage for children with urinary tract infections or acute otitis media is 8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses every 12 hours for 10 days. Use identical daily dosage for 5 days for shigellosis. **Renal Impaired:** Creatinine clearance above 30 ml/min, give usual dosage, 15-30 ml/min, give one-half the usual regimen, below 15 ml/min, use not recommended.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS: Usual adult dosage is one DS tablet, two tablets or four teasp (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONIA: Recommended dosage is 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

HOW SUPPLIED: DS (double strength) Tablets (160 mg trimethoprim and 800 mg sulfamethoxazole)—bottles of 100, 250 and 500. Tel-E-Dose[®] packages of 100. Prescription Paks of 20. Tablets (80 mg trimethoprim and 400 mg sulfamethoxazole)—bottles of 100 and 500; Tel-E-Dose[®] packages of 100. Prescription Paks of 40. Pediatric Suspension (40 mg trimethoprim and 200 mg sulfamethoxazole per teasp.)—bottles of 100 ml and 16 oz (1 pint). Suspension (40 mg trimethoprim and 200 mg sulfamethoxazole per teasp.)—bottles of 16 oz (1 pint). STORE TABLETS AT 15°-30°C (59°-86°F) IN A DRY PLACE PROTECTED FROM LIGHT. STORE SUSPENSIONS AT 15°-30°C (59°-86°F) PROTECTED FROM LIGHT.

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The Indiana Birth Problems Registry

Identification and Support for Special Birth Problems

TABLE 1
Birth Problems in Indiana
January-December 1987

CATEGORIES	1ST QTR	2ND QTR	3RD QTR	4TH QTR	TOTAL
Live Births	17,581	19,207	19,827	19,467	76,082
Babies with C.A.*	211	196	197	167	771
Total C.A.	263	264	231	232	990
C.A. per 1,000 Live Births	14.96	13.74	11.65	11.92	13.01
Babies with L.B.W.*	968	1,209	1,210	1,047	4,434
L.B.W. per 1,000 Live Births	55.06	62.95	61.03	53.78	58.28
Total Babies with B.P.*	1,179	1,405	1,407	1,214	5,205
Total B.P. per 1,000 Live Births	67.06	73.15	70.96	62.36	68.41
Fetal Deaths	157	174	167	134	632
Fetal Deaths with C.A.	18	23	17	07	65
Fetal Deaths per 1,000 Live Births	8.76	9.01	8.42	6.88	11.16

*C.A. = Congenital Anomalies; L.B.W. = Low Birth Weights; B.P. = Birth Problem

Of the 76,082 live births recorded in Indiana last year, slightly more than 6.8% (5,205) of the babies had birth problems. The statistics were compiled by the State Board of Health since its Indiana Birth Problems Registry became active in January 1987.

The twofold purpose of the Registry, which was mandated by State Law 16-4-10 in 1986, is:

- To locate all cases of birth problems occurring in Indiana residents so that the State Board of Health can begin to formulate appropriate preventive and control measures; and
- To provide information to the parents of children with birth problems about care facilities and other

resources available to help them.

"Birth problems" include congenital anomalies, low birth weights and fetal death, according to Carolyn S. Waller, Registry program director. Slightly more than 4,400 of the babies born in Indiana last year had low birth weights.

Table 1 indicates the total number of birth problems recorded in Indiana in 1987; the information was provided by hospitals from birth certificates. Table 2 summarizes 1987 data by county. The figures do not indicate any specific county or group of counties with a high incidence of birth problems compared to the state as a whole.

The educational component of the

program began in March. The Board of Health is sending letters to parents of infants with congenital anomalies and/or low birth weights with information about resources and services available statewide. In addition, hospitals are distributing a brochure providing general information about fetal deaths, support groups, and the availability of genetic counseling for families who have experienced a fetal death.

For more information about the Birth Problems Registry, physicians may call Carolyn Waller at (317) 633-0125.

CONTINUED ON NEXT PAGE

Indiana Birth Problems Registry—January-December 1987 Provisional Data

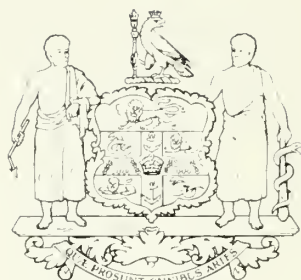
County*	Total Births	Babies with C.A.**	Total C.A.'s	C.A.'s per 1000 L.B.	L.B.W.*** (5lbs 8oz or less)	L.B.W.'s per 1000 L.B.	Total Fetal Deaths	Total Fetals per 1000 L.B.'s	Total Babies with B.P.'s ****	Total B.P.'s per 1000 L.B.'s
Adams	539	7	7	12.99	16	29.68	6	11.13	23	42.67
Allen	4631	35	48	10.36	345	74.50	34	7.34	380	82.06
Bartholomew	1041	8	10	9.61	71	68.20	8	7.68	79	75.89
Benton	119	3	8	67.23	11	92.44	0	0.00	14	117.65
Blackford	290	2	2	6.90	15	51.72	3	10.34	17	58.62
Boone	545	5	9	16.51	22	40.37	3	5.50	27	49.54
Brown	154	1	2	12.99	10	64.94	3	19.48	11	71.43
Carroll	238	4	4	16.81	10	42.02	2	8.40	14	58.82
Cass	553	5	5	9.04	33	59.67	6	10.85	38	68.72
Clark	560	5	5	8.93	18	32.14	9	16.07	23	41.07
Clay	333	4	4	12.01	24	72.07	6	10.02	28	84.08
Clinton	430	12	13	30.23	27	62.79	7	16.28	39	90.70
Crawford	105	2	2	19.05	3	28.57	0	0.00	5	47.62
Daviess	409	13	14	34.23	20	48.90	7	10.11	33	80.68
Dearborn	248	3	4	16.13	5	20.16	0	0.00	8	32.26
Decatur	608	5	5	8.22	19	31.25	6	9.87	24	39.47
Dekalb	515	2	2	3.88	19	36.89	3	5.83	21	40.78
Delaware	1489	37	49	32.91	92	61.79	19	12.76	129	86.64
Dubois	589	10	12	20.37	25	42.44	5	8.49	35	59.42
Elkhart	2516	17	22	8.74	138	54.85	24	9.54	155	61.61
Fayette	233	1	3	12.88	16	68.67	1	4.29	17	72.96
Floyd	478	5	7	14.64	25	52.30	7	14.64	30	62.76
Fountain	108	2	2	18.52	12	111.11	2	18.52	14	129.63
Franklin	145	1	1	6.90	6	41.38	1	6.90	7	48.28
Fulton	233	6	6	25.75	13	55.79	3	12.88	19	81.55
Gibson	403	4	5	12.41	10	24.81	3	7.44	14	34.74
Grant	936	16	20	21.37	54	57.69	3	3.21	70	74.79
Greene	357	3	3	8.40	17	47.62	3	8.40	20	56.02
Hamilton	1508	10	16	10.61	65	43.10	8	5.31	75	49.73
Hancock	541	4	7	12.94	41	75.79	6	11.09	45	83.18
Harrison	217	3	3	13.82	5	23.04	3	13.82	8	36.87
Hendricks	968	5	6	6.20	50	51.65	6	6.20	55	56.82
Henry	621	8	8	12.88	29	46.70	6	9.66	37	59.58
Howard	1095	4	6	5.48	56	51.14	7	6.39	60	54.79
Huntington	525	3	4	7.62	22	41.90	4	7.62	25	47.62
Jackson	517	9	10	19.34	26	50.29	3	5.80	35	67.70
Jasper	298	2	3	10.07	12	40.27	5	16.78	14	46.98
Jay	265	6	7	26.42	9	33.96	3	11.32	15	56.60
Jefferson	316	3	3	9.49	11	34.81	2	6.33	14	44.30
Jennings	319	1	4	12.54	17	53.29	1	3.13	18	56.43
Johnson	1181	13	16	13.55	61	51.65	8	6.77	74	62.66
Knox	451	2	3	6.65	20	44.35	3	6.65	22	48.78
Kosciusko	948	27	33	34.81	57	60.13	9	9.49	84	88.61
La Grange	600	5	8	13.33	22	36.67	3	5.00	27	45.00
Lake	6181	59	90	14.56	423	68.44	72	11.65	482	77.98
La Porte	1258	15	17	13.51	90	71.54	18	14.31	105	83.47
Lawrence	476	4	4	8.40	36	75.63	2	4.20	40	84.03
Madison	1654	33	44	26.60	117	70.74	12	7.26	150	90.69
Marion	13742	101	129	9.39	927	67.46	92	6.69	1028	74.81
Marshall	633	8	13	20.54	48	75.83	4	6.32	56	88.47
Martin	171	0	0	0.00	9	52.63	0	0.00	9	52.63
Miami	638	5	7	10.97	28	43.89	5	7.84	33	51.72
Monroe	1139	6	10	8.78	70	61.46	17	14.93	76	66.73
Montgomery	428	3	5	11.68	29	67.76	1	2.34	32	74.77
Morgan	735	7	10	13.61	28	38.10	9	12.24	35	47.62
Newton	153	4	4	26.14	8	52.29	5	32.68	12	78.43
Noble	627	9	12	19.14	18	28.71	6	9.57	27	43.06
Ohio	41	1	2	48.78	0	0.00	0	0.00	1	24.39
Orange	238	0	0	0.00	11	46.22	3	12.61	11	46.22
Owen	210	2	2	9.52	9	42.86	2	9.52	11	52.38
Parke	169	2	2	11.83	6	35.50	0	0.00	8	47.34
Perry	183	3	8	43.72	7	38.25	2	10.93	10	54.64
Pike	172	1	1	5.81	9	52.33	1	5.81	10	58.14
Porter	1504	8	10	6.65	66	43.88	18	11.97	74	49.20
Posey	352	4	5	14.20	31	88.07	2	5.68	35	99.43

County*	Total Births	Babies with C.A.**	Total C.A.'s	C.A.'s per 1000 L.B.	L.B.W.*** (Slbs 8oz or less)	L.B.W.'s per 1000 L.B.	Total Fetal Deaths	Total Fetals per 1000 L.B.'s	Total Babies with B.P.'s****	Total B.P.'s per 1000 L.B.'s
Pulaski	172	4	4	23.26	8	46.51	1	5.81	12	69.77
Putnam	342	2	2	5.85	15	43.86	2	5.85	17	49.71
Randolph	303	4	6	19.80	9	29.70	1	3.30	13	42.90
Ripley	289	4	4	13.84	11	38.06	1	3.46	15	51.90
Rush	242	3	3	12.40	11	45.45	0	0.00	14	57.85
St. Joseph	3585	46	54	15.06	235	65.55	22	6.14	281	78.38
Scott	200	4	5	25.00	11	55.00	0	0.00	15	75.00
Shelby	538	2	2	3.72	30	55.76	5	9.29	32	59.48
Spencer	211	0	0	0.00	6	28.44	2	9.48	6	28.44
Starke	324	4	4	12.35	16	49.38	0	0.00	20	61.73
Steuben	386	1	2	5.18	12	31.09	3	7.77	13	33.68
Sullivan	226	0	0	0.00	12	53.10	2	8.85	12	53.10
Switzerland	72	0	0	0.00	5	69.44	0	0.00	5	69.44
Tippecanoe	1730	20	23	13.29	77	44.51	18	10.40	97	56.07
Tipton	205	2	3	14.63	6	29.27	0	0.00	8	39.02
Union	20	0	0	0.00	1	50.00	0	0.00	1	50.00
Vanderburgh	2349	15	17	7.24	134	57.05	14	5.96	149	63.43
Vermillion	157	3	3	19.11	8	50.96	1	6.37	11	70.06
Vigo	1397	25	34	24.34	89	63.71	10	7.16	114	81.60
Wabash	486	12	14	28.81	25	51.44	2	4.12	37	76.13
Warren	53	0	0	0.00	3	56.60	0	0.00	3	56.60
Warrick	599	5	5	8.35	32	53.42	6	10.02	37	61.77
Washington	258	1	1	3.88	10	38.76	1	3.88	11	42.64
Wayne	963	9	11	11.42	64	66.46	8	8.31	73	75.80
Wells	396	2	2	5.05	22	55.56	2	5.05	24	60.61
White	310	4	4	12.90	14	45.16	6	19.35	18	58.06
Whitley	390	1	1	2.56	19	48.72	3	7.69	20	51.28
State Total	76082	771	990	13.01	4434	58.28	632	11.16	5205	68.41

* County—Represents mother's county of residence
** C.A.—Congenital Anomaly
*** L.B.W.—Low Birth Weight
**** B.P.—Birth Problem

Notes from the ...

Review by
Austin L. Gardner, M.D.
Indianapolis



ANNALS of THE ROYAL COLLEGE OF SURGEONS of England

An editorial in the January 1988 issue by R.M. Kirk gave the explanation for the recent thin issues of the *Annals* as the result of a drastic policy of selection brought on by a referee system. He had come to abhor the retrospective thoughts for posterity of senior colleagues wishing to deliver the "Oggleboggle Memorial Lecture" for publication. He stated that he would ask the advice of younger surgeons as a rule, "since it is they who have the keenest interest in the future of our profession." This attitude to me is questionable.

The lead article is entitled "Cerebral Ischemia and Surgical Practice" by Nicholas V. Todd of the National Hospitals for Nervous Diseases, Queen Square, London. This is based on a Hunterian lecture delivered at the Royal College of Surgeons of England. This review describes the mechanisms of control of cerebral blood flow emphasizing autoregulation. It points out that relative ischemia exists when brain metabolism is relatively greater than blood flow. This can be evaluated by measuring arterial venous oxygen differences or oxygen extraction ratios. Cerebral ischemia results when energy failure leads to malfunction of ion transport systems with movement of sodium and calcium intracellularly and potassium into the extracellular fluid. The increase in intracellular osmolarity provides the potential for water movement and explains the early cellular edema of brain ischemia. This also explains the changes seen on the CT

scan and the NMR. He states that pharmacologic vasodilators including carbon dioxide, prostacyclin, nitroprusside, alpha-adrenergic, and calcium channel blocking drugs fail to increase cerebral blood flow during hypoperfusion. In evaluation of cerebral blood flow in human stroke, it has been observed that neurologic function is preserved when flow is greater than 19 ml/100 g/min. A sensitive indicator of outcome is the cerebral metabolic rate for oxygen. The conclusion from the study of 34 patients with acute nonhaemorrhagic infarction was the importance of maintaining haemodynamic stability. This conclusion, which we have all seen clinically, was supported by careful metabolic studies of oxygen extraction ratios, cerebral blood flow and metabolic studies.

The author also reviewed the demise of the extracranial, intracranial bypass procedure. At the time of his presentation, the author felt there was no consensus view regarding the indication or effectiveness of carotid endarterectomy. However, his most recent surgical reference was from 1979.

"The Effect of Dopamine on Renal Function During Aortic Cross Clamping" was reviewed by Mohamed G. Salem, *et al* of Liverpool.

A careful study of 18 patients operated on for abdominal aortic lesions was conducted by dividing the group in half. The first group was given Dopamine during the first half of the operation, and the second group was given Dopamine during the second half

of the operation. Urine output was recorded along with numerous other data. The following results were observed: Urine output increased dramatically, sodium and potassium output increased significantly, the creatinine clearance increased by a two-to-one ratio, the plasma osmolarity remained the same, and there was an insignificant change in renin in the patients receiving Dopamine.

Methods to protect the kidney during aortic cross clamping have included replacement of extracellular fluid, infusion of diuretics and the avoidance of hypotension. It is clear that Dopamine infusion will aid in the protection of renal function.

The "Emergency and Elective Sclerotherapy of Oesophageal Varices" was presented by Andrzej B. Szczepanik and Witold J. Rudowski of Warsaw, Poland. (Professor Rudowski was the Finneran Lecturer at St. Vincent Hospital in 1987.) The authors presented results of the treatment of 71 patients with bleeding oesophageal varices. This required 330 procedures, most of which were with a rigid scope, but later in the experience, the flexible scope was used. The results were good, with a one-year survival of 82% and the definitive control of bleeding in 30 of 34 emergency admissions. The acute mortality was at 26%.

The use of sclerotherapy was reintroduced with the recognition of the inadequacy of various shunting procedures. The authors feel that the method is indicated when there is a failure of

vasopressin and balloon tamponade. The elective use reduces the risk of re-bleeding.

"Elective Splenectomy in Haematological Disorders" was presented by I.R. Grant and others of Leicester Royal Infirmary. There were 106 consecutive splenectomies analyzed. The most common indication was thrombocytopenic purpura followed by Hodgkin's disease for staging. The most common post-operative complication was thrombocytosis with platelet counts as high as 974,000. The authors

also emphasized the important role in immunity played by the spleen and the lower IgM levels as a result of splenectomy. The wound infection rate was only 4%. Patients with autoimmune haemolytic anaemia fared poorly because of long-term risk of infection, and life-long penicillin was recommended. Pneumococcal vaccine was not routinely recommended.

"Oesophageal Resection in the Elderly" was presented by Parnell Keeling of Dublin. Results of oesophageal resection in a large group

of patients above and below the age of 70 were compared. Survival figures of the two groups were about the same. Various approaches to overcome cancer of the oesophagus were carefully considered.

A brief review of sympathectomy and treatment of rectal tenesmoid pain by Aubrey Bristow and J.M.G. Foster indicated success in chemical sympathectomy in the majority of patients treated, although it was a small group.

Who and What Is Black and Why?

Letter to the Editor

FOR YEARS I HAVE been wanting to write a letter just like this one.

Indeed I have been feeling that urge every time I read an article purporting to be an expression of medical science referring to black as a genetic racial category of our population. Who is and what is black and why? Every demographic study appearing in your journal which claims to identify and interpret human varieties in terms of genetic influences uses this as a term of reference.

Actuarial tables, vital statistics, researchers who study susceptibility and resistance to disease or the variables in tolerance of drugs and comfortable in its use as a racial indicator. But why should this be since the term in the accepted usage admits more variables than factors that are common or consistent? What is a black? In the context of its general use, pigmentation is not necessarily a determinant. There are blacks who by inspection alone cannot be readily distinguished from whites, and for whom this category can only be established by tracing the archives of ancestry.

In this country state laws and social usages determine the category "black;" and these can hardly be considered as basis for scientific considerations. Ignoring socially imposed implications, why should an individual whose parentage is mixed in varying degrees of Caucasian and African heritage, be predicted as being only able to react genetically as black? There is no known blood test which can distinguish the blood of a Caucasian from an African.

Why then should science subscribe to a social convenience to dictate that all products of miscegenation are black; and in terms of medical considerations of tolerance and susceptibility be expected to react as such in the predetermined behavioral pattern of blacks—whatever this may be?

Anthropologist and sociologist seem to agree that in the United States, in the group previously designated as Negro and now referred to as blacks, less than 40% are unmiscegenated. With such a miscellany—the product of miscegenation—how can there be a common racial gene? How can there be generic racial characters that are intrinsic in this black group? How can

scientific explanations and conclusions when based on invalid premises be valid? This challenges the validity of all statistics that, in context, are based on a classification so indiscriminating and inclusive.

How then, for example, can statistics on "black" hypertensives be accepted as credible when many of the subjects reported on have as many Caucasoid as black genes? Such statistics reflect not a scientific inquiry but a procrustean exercise. Most behavioral differences identified as racial reflect really the impact of differing economics and environment. A readily observable illustration is in speech and also in slangs.

In my area, I have been engaged for more than 40 years in the general practice of medicine. I have a truly mixed clientele. I have never qualified my medical care or treatment by the racial appearance of my patient. I have always considered recommendations and conclusions based on race as being illogical and specious. I have never had any reason to regret this.—E.L.C. Broomes, M.D., 2402 Broadway, East Chicago, Ind. 46312.



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1988 Legislative Session Marks Several Achievements in Health Arena

Julianna M. Newland
Director of Government Relations

"A hard beginning maketh a good ending."
—John Heywood

THE BREAK-NECK PACE of the 1988 "short" legislative session helped Indiana's lawmakers to clear a full calendar of items in 30 session days. Over 800 bills were filed for consideration and over 200 of these managed to complete their journey into law.

The health and medical area saw its fair share of legislative proposals this year with the physician community having ended the session with several legislative accomplishments.

The June issue of *INDIANA MEDICINE* will contain a "1988 Digest of Health and Medical Laws" which summarizes the newly passed health and medical laws of importance to physicians.

A special thank you goes to the members of the ISMA's Commission on Legislation, the ISMA's Legislative Assistants, Duane Schaefer and Mike Abrams, and those physicians and auxiliaries who helped make the lobbying effort successful—especially at the grass roots level—by keeping the lawmakers informed on health and medical measures.

Medical Malpractice

The legislative session would not have been complete without some legislative measure being debated affecting the Indiana Medical Malpractice Act. This short session saw two

failed attempts to drastically alter the medical review panel process in favor of the plaintiff.

One bill (HEA 1070) which has now become law began as a review of the operations of the Indiana Department of Insurance. Through the course of deliberations, a proposal was included to the bill which would have allowed a case to proceed directly to court if the defendant failed to comply with a discovery order issued by the panel chairman. Some lawmakers alleged that it is the defendant who slows down the panel process. Through the organized efforts of the ISMA and

ISMA Successfully Kept the Indiana Medical Malpractice Act Void of Proposals That Would Have Had a Deleterious Effect on It . . .

other interested groups, this onerous language was removed from the bill by a 73-25 vote.

A similar proposal was attempted on the bill when HB 1070 was on second reading in the Indiana Senate. This amendment would have allowed the plaintiff to bypass the medical review panel process if the claim was filed two years from the date of discovery and if the plaintiff could prove that the defendant tried to conceal information or acted with malice. This amendment was defeated in the Indiana Senate.

Both of these actions marked significant achievements for the ISMA in keeping the Indiana Medical Malpractice Act void of proposals which would have a deleterious effect on the Act.

Governor Vetoes Prescription Drug Study Bill

SB 139 which would have delayed the implementation of the recommendations of the Prescription Abuse Study Committee from November 1988 to July 1989 was vetoed by Governor Robert D. Orr.

SB 139 received only two votes in opposition from the Indiana House of Representatives and three opposing votes in the Indiana Senate.

The Prescription Abuse Study Committee, whose members are appointed by the governor, is to study the feasibility of a triplicate prescription program in Indiana and to look at other programs designed to reduce the scope of prescription drug diversion and abuse.

The effect of the governor's veto will allow the study committee to issue its recommendations and to implement them in 1988.

Protection Under Peer Review Expanded

HEA 1196 will expand the confidentiality protections and immunity provisions under Indiana's peer review statute to include the good faith peer review activities of PPOs and HMOs.

Proposal to Limit Physician Dispensing of Drugs Fails

Legislation which would have restricted the ability of the physician to dispense medications from the office did not receive a committee hearing

this session. It is anticipated that this issue will be back again in the 1989 session.

Mandatory Assignment Tied to Licensure Proposal Unsuccessful

SB 286 which would have required as a condition of licensure that a physician agree to accept the federal assignment rate for Medicare claims did not receive a hearing in the Senate Health and Human Services Committee this session. This issue has been a great cause of concern in many states as legislation has popped up as a result of the U.S. Supreme Court decision upholding the Massachusetts statute which requires that physicians accept the assignment rate as a condition for licensure.

Surrogate Motherhood Contracts Unenforceable

The Indiana General Assembly approved an amended form of SB 98 which would as a matter of public policy prohibit the enforcement of surrogate motherhood contracts. The issue of surrogate motherhood was the subject of a study by a legislative committee last summer. Many of the ethical, medical, and legal concerns regarding this practice remain unresolved. The lawmakers also decided to establish another committee to give further study to these issues involving surrogate motherhood and to report the findings to the lawmakers.

Comprehensive AIDS Package Approved

SEA 9 which moved its way through the legislative process through much deliberation and negotiation also managed to receive state funding (\$700,000) to implement the proposals contained in the measure. Briefly, SEA 9 would: extend the current reporting requirements of confirmed cases of AIDS to include HIV positive test results (exemptions would be allowed for anonymous testing sites; also, when reporting the positive HIV test results or the confirmed cases of AIDS, the

physician is to report, if known, whether the individual had undergone any blood transfusions); requires that the person to be tested for HIV give his consent and that the consent be documented (exceptions would be provided if a physician determines that an HIV test is medically necessary and the patient has given a general health care consent, if the court orders the

SEA 9 Requires the State Board of Health to Provide Information to Physicians and Dentists on AIDS and Related Diseases . . .

test, or if the blood is collected anonymously as part of an epidemiologic survey); establishes an advisory committee to work with the State Board of Health in the promulgation of rules governing the proper transport and treatment of infectious wastes; provides a mechanism to deal with carriers of dangerous communicable diseases who cannot or will not act responsibly; establishes a procedure for the notification of emergency medical care providers if that provider has been exposed to blood through an incident that can result in the transmission if the patient is found to have a dangerous communicable disease; requires employers to provide training and equipment for use of universal precautions for those workers who come in contact with body fluids; creates an AIDS advisory council under school corporations; requires marriage applicants to receive information about risk factors and testing sites for sexually transmitted dangerous communicable disease; establishes procedures for HIV testing as a condition

of probation; and requires the State Board of Health to provide information to physicians and dentists on AIDS and related diseases.

Two proposals of interest which were not included in SEA 9 would have required mandatory continuing education on AIDS for physicians and dentists and would have required HIV testing for marriage applicants.

Tobacco Proposal Receives Strong Vote of Support

SEA 235 which would prohibit the promotional distribution of tobacco to minors was amended during the legislative process to add a penalty provision for a minor who purchases tobacco (Class C Infraction). This measure was passed on Third Reading in the Indiana House of Representatives by a vote of 99-0. This bill was part of the continuing effort by the ISMA and the Indiana Coalition for a Tobacco Free Society to reduce the incidence of tobacco use in Indiana.

Use of Anabolic Steroids for Athletic Performance Unlawful

The lawmakers approved SEA 415 which would make it a felony for a physician to prescribe anabolic steroids for purposes of enhancing athletic performance. In addition, the measure would establish a felony penalty for those persons who distribute anabolic steroids for purposes of athletic performance. This proposal was introduced on behalf of the ISMA as a result of a resolution adopted in the ISMA's House of Delegates.

Health Records Law Amended

Physicians and hospitals, health facilities, and other health care providers will be required under Indiana law to keep their health records for a minimum of seven years as a result of the passage of HEA 1055. There would be a different requirement for maintenance of x-rays and mammograms and that new requirement is five years. Also, when a health care provider gives a mammogram, the patient is to be

notified in writing that by law the health care provider is required to maintain that mammogram for only five years. When an x-ray is given, the patient is to be notified by the posting of a sign in the x-ray room or in writing that the x-ray must be kept by the provider for five years. After that five years has transpired the patient has 30 days to come get the mammogram. Within the five-year period, the patient may obtain a copy of the x-ray or mammogram at cost.

Expansion of Funding for Pre-natal Care Programs Under Medicaid Approved

Indiana's lawmakers approved a measure which would expand the income eligibility requirements under Medicaid for coverage of pre-natal care programs, delivery, and medical care of the child up to age one for women whose incomes are at 50% of the poverty level. Under this new law, the state will receive matching federal funds for the expansion of Medicaid to include these pre-natal care and medical care programs.

Drug Testing Measure Scrapped

SB 270 which would have provided guidelines for employers and schools that wish to test their employees, prospective employees, or students was stalled in the Indiana House of Representatives. Differences of opinion pitted representatives of employer and employee groups against each other over such areas as "probable cause" to initiate drug testing, the method of testing, etc.

Several legislative committees will be meeting over the summer to discuss issues of interest to the medical community. Some of these issues are surrogate motherhood, AIDS, and liability insurance.

If you would like a copy of any of the recently enacted health and medical laws, please contact the ISMA's Department of Government Relations at 1-800-382-1721 or 317-925-7545.



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1 For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2 For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3 The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium-Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium on content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS, and OVERDOSEAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS and WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSEAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS and WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1 Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2 Intravenous administration of 300 to 500 mEq/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3 Correction of acidosis, if present, with intravenous sodium bicarbonate.

4 Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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YOCON® YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubiaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it, however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral alpha-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

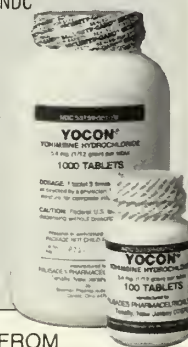
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Medicine's Lighter Moments

TED L. GISELL, M.D.
Indianapolis

IN 1939, WAR IN Europe was in progress. At that time, the United States was devoting some slight effort in support of the Allied action in Europe without actually becoming militarily involved. Part of the preliminary preparations for possible defensive action consisted of the formation of the First Armored Division at Ft. Knox, Ky.

That fall, the division (commanded by Colonel George Patton) was about to begin a maneuver program to test its combat capability. Plans called for some additional medical personnel to take care of any possible injuries during the exercises.

Having been recruited as a Reserve officer some months earlier, upon graduation from medical school, I was ordered to report for two weeks of active duty at Ft. Knox in support of the military medical program during these maneuvers.

I had no sooner gotten settled in my quarters at Ft. Knox when there was a knock on my door. A sergeant from the post hospital wanted me to go immediately to the hospital because there had been a terrible accident. Unfortunately, many of the medical officers of the post were at the Brown Hotel in Louisville to entertain a group of senators who had arrived to inspect the division's maneuvers. The senators were members of the Senate Military

Affairs Committee, chaired by Senator Harry Truman.

The hospital Emergency Room was swamped. There were only two medics on duty but, although they had been working for some time, they had the patients fairly well under control. The soldiers had been drinking in nearby Elizabethtown and, while returning to camp, had decided to lock arms and

THE ARMY DELIVERY

block the highway. Regrettably, a trucker did not see them in time and plowed into the group, killing one or two and sending about 10 of them to the hospital.

The first thing I was asked to do was to go to the Delivery Room where a Regular Army major's wife was in labor. The medics had been called earlier to see her but they had been unable to break away from the emergency cases. I arrived in the Delivery Room just in time to put on one glove and catch the baby, a beautiful 8½-pound boy. The major was not present because he was at the Brown Hotel for the Senate committee reception.

I returned to the ER and assisted with the injured soldiers. Finally, about 3 a.m., I retired to my quarters for some rest.

A few hours later, I reported to the hospital commander, Colonel Claude Holmes. Much to my surprise, I discovered he was an Indiana University graduate and had been a classmate of both my father's and my mother's.

Later that day, I checked on my obstetrical patient and found her and the baby in excellent condition, but the father of the child was irate. He was upset because his wife had been

delivered by a Reserve first lieutenant who had never had any military service. He was so belligerent that I thought he might physically attack me at any minute.

Someone called him away and he immediately went to Colonel Crawford, the post commander, to demand an explanation and a hearing as to why this delivery was done by a Reserve lieutenant who was not even officially on duty. The hearing was held and it was discovered that I had performed the delivery of 60 babies during two months of obstetrical experience toward the end of my internship at Coleman in Indianapolis. In fact, my experience was four to five times that of the entire Ft. Knox medical staff.

As a result of these findings, the hearing board, presided over by Colonel Crawford, demanded that the major who created the disturbance give me an official apology at the next Retreat ceremony. At that ceremony, conducted after completion of the first week of maneuvers, the major officially apologized—in front of 10,000 troops, a large number of spectators, and Senator Harry Truman and the Military Affairs Committee.

The next night a banquet, at which I was not present, was held at the Ft. Knox Officers Club in honor of the visiting dignitaries. During the course of the evening, Senator Truman asked that the young officer to whom the major had apologized make an appearance. I was summoned to the club to shake the hand of Harry Truman and the other members of his committee.

I was not very far from having an uncontrollable loss of composure while being attacked by the major. And I almost expected the firing squad during my appearance before the hearing board. This was not a good way to be introduced into military service.

Examining New Solutions for Medicare Funding

JOHN D. MacDOUGALL, M.D.
President
Indiana State Medical Association

WITH INCREASING frequency we read of changes to the Medicare program. Congress and the Administration are determined to reduce the budget deficit by severely cutting Medicare spending. The Office of Management and Budget now wants to cut \$1.25 billion from Medicare reimbursement. That's in addition to the \$2.1 billion reduction recently enacted as part of the budget reconciliation bill. As announced late last year, Medicare beneficiaries will pay a 38.5 percent premium increase.

We've been told that 29 health maintenance organizations who contracted with the federal government to treat Medicare recipients couldn't afford to provide for what the government would pay. They've had to drop their contracts with the Health Care Finance Administration or raise their premiums. This means 80,000 older Americans, according to *Medicine and Health*, must seek new plans or fee-for-service care. Locally, members of Key Health Care 65 found themselves in the midst of this problem when the plan recently announced a 112 percent premium increase. (All this and HCFA continues to tout prepaid plans as a means of control Medicare costs.)

From an administrative standpoint, the Medicare program defies comprehension. To say the tinkering and



Dr. MacDougall

adjustments the federal government has attempted thus far have failed, is an understatement. The program has become a regimen of red tape and regulation that has not improved the quality of patient care. Government attempts to fix the program have succeeded only in making it more complex.

The system that started in the 1960s to provide older Americans with access to health care now threatens to undermine the care the elderly have come to expect. For example, a favorite Medicare term is "medically unnecessary," which implies the treatment is unneeded when actually it means the service is not covered by Medicare. The mammogram, under certain conditions, is one of these "unnecessary" services. For instance, Medicare will not pay for mammograms used to screen asymptomatic women aged 40 and above for breast cancer even if their mothers or sisters have had the disease.

The American Cancer Society recommends women over 50 should have a mammogram every year when feasible. The report, "Mammography: Two Statements of the American Cancer Society," says about breast cancer, "Advancing age is the most important risk factor. Most breast cancers occur in women over the age of 50. In this age group, there is definitive proof that screening for breast cancer lowered the death rate by 30 percent . . ."

The mammogram is just one of these "medically unnecessary" services. We doctors are supposed to know which services are covered and which are not; but Medicare carriers won't give us a list.

Continued quality care is of utmost importance, but cost continues to gain more attention from Congress and the media. It is widely recognized that the current system is headed for insolvency. The prosperous conditions of the 60s when Medicare was enacted are no longer with us. No fee freeze, no fine tuning, no funding cuts will bring those conditions back. Nor will they solve the underlying problem—the pay-as-you-go system can't stay afloat as the number of beneficiaries begins to exceed the number of workers paying taxes to support Medicare. That's what is currently happening. While Congress has attempted to adequately fund the program from year to year, it has taken no action to offset this even bigger problem looming in the future.

The medical profession is too often miscast as the villain in this troubling scenario. It is clearly evident that we need to take care of the nation's elderly; however, it is becoming increasingly difficult for doctors to provide quality care under the current regulations. Physicians have been subject to fee controls, but the most damaging and

Originally published in *The Indianapolis Star*, March 2, 1988, as a letter to the editor.

frustrating restrictions have been on the kinds of procedures we may provide to older persons and even on the time they may be allowed to recuperate. These regulations present ethical problems for doctors because they impinge upon the quality of care we can give our patients.

In 1986, the American Medical Association's Board of Trustees released its "Proposal for Financing Health Care of the Elderly." The plan would create a publicly managed trust fund through a tax on the adjusted gross income of all individuals up to age 65 (increasing to age 67 in three-month per year increments). After the plan's enactment, all individuals 65 and above would be provided an annual voucher

in an amount sufficient to purchase an individual private health insurance policy.

The plan proposes additional IRA contributions be allowed for funding supplemental health care expenses. It would also make IRA withdrawals for health expenses tax-free.

The AMA believes the plan would assure funding of health care for the elderly, with responsibility shared by the federal government, providers and beneficiaries. Under the proposed program, health care will be self-funded, with no need for general revenue funds from the federal government.

Although the proposal has been drafted into legislative language, the AMA has yet to get a sponsor.

Supporting a tax increase for anything in an election year is politically hazardous. However, the AMA is continuing to talk to people in Congress.

As one AMA staffer said about the plan, "It's a realistic proposal. It looks at problems of the future today before they are insurmountable."

Some have voiced the fear that scrapping the Medicare system might give us something we like even less; however, the AMA's plan is certainly worthy of more attention from Congress, older persons and the media. The problems inherent in the Medicare system will not be solved quickly, but the health care of our older citizens is important enough for us to examine all possible options.

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Indiana's Medical Malpractice Act: An Overview

ROBERT W. STROHMEYER JR., J.D.
Indianapolis

THE INDIANA General Assembly enacted the Indiana Medical Malpractice Act in 1975.¹ The Medical Malpractice Study Commission, which had been formed to review the need for a comprehensive medical malpractice act, found that medical malpractice premiums for physicians had increased more than 400% from 1970 to 1975, and that the frequency of claims and the average damage award had also increased significantly.

As a result of these increases in claims and damage awards, several of the major insurance companies that wrote the majority of the medical malpractice insurance issued in Indiana decided to pull out of the market or substantially limit the coverages available. To avoid a further malpractice insurance crisis, the Indiana Medical Malpractice Act was adopted.

The physician who can report that a medical malpractice claim has not been filed against him is the exception, rather than the rule. Now, more than ever, patients are aware of medical malpractice and the potential for recovery. With the recent advances in medicine, patients expect a cure, and the physician's failure to effect a cure has led to the filing of many malpractice lawsuits. Although many malprac-

tice lawsuits are baseless, one can certainly understand the distress a patient feels when the physician cannot effect a cure. For these reasons, it is clear that so long as physicians treat patients, there will be medical malpractice lawsuits.

Obviously, one cannot go into great detail in the few paragraphs to follow. However, it is the author's hope that the readers of this article will gain a better understanding of the handling of medical malpractice claims in the state of Indiana. This article will

More Than Ever, Patients Are Aware of Medical Malpractice and the Potential for Recovery . . .

discuss the topics of coverage under the Act, liability under the Act, and claims handling under the Act.

Coverage Under the Act

The Act provides certain protections to health care providers that are not available to other individuals and professionals who have been sued for negligence. For a health care provider to fall under the protection afforded by the Act, the health care provider must be "qualified" under the Act. The types of health care providers who can seek qualification under the Act has increased significantly since the Act was first passed.

Generally, a "health care provider" includes an individual or business entity licensed or legally authorized by

the state to provide health care or professional services as a physician, hospital, health facility, dentist, registered or licensed practical nurse, midwife, optometrist, podiatrist, chiropractor, physical therapist, or psychologist.² The Act also covers, among other entities, colleges and universities providing health care to students, blood banks, community mental health centers, prepaid health care delivery plans, health care organizations, and other organizations and entities generally thought to provide health care or professional services.³

For a health care provider to be "qualified" under the Act, the health care provider must file with the Commissioner of Insurance proof of financial responsibility and must also pay the surcharge assessed on all health care providers. The proof of financial responsibility is generally a form filed by the health care provider's insurance carrier stating that the health care provider is insured by a policy of malpractice liability insurance in the amount of at least \$100,000 per occurrence and \$300,000 annual aggregate if the health care provider is an individual. The limits of liability necessary for hospitals, prepaid health care delivery plans, and other health facilities is higher, as expected. If the health care provider chooses not to obtain liability insurance, it can instead file with the Commissioner of Insurance cash or a surety bond approved by the Commissioner in the appropriate amount.⁴

Once the health care provider is "qualified" under the Act, no action can be commenced against the health care provider in any court of this state until after the complaint has been presented to a medical review panel and an opinion has been rendered by the panel.⁵ There are, however, a few exceptions to this rule. The parties

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Publication supported in part by the Emily and Earl Townsend Fund of the Indiana Medical Foundation.

may agree that the claim need not be presented to a medical review panel, in which case the claim can be filed directly in the Court.⁶

Additionally, in 1985 the Indiana General Assembly amended the Act to provide that, if the patient seeks damages from the health care provider in an amount no greater than \$15,000, the action may be filed directly in the courts without the need for review by a medical review panel.⁷ The amendment is intended to expedite the prosecution of smaller claims and to eliminate the costs associated with prosecution of a claim through a medical review panel.

The health care provider who fails to qualify under the Act is not covered by the provisions of the Act and is subject to liability under the law without regard to the provisions of the Act. Thus, for a health care provider who is not "qualified," the patient may file a claim in any court of law having jurisdiction and demand a trial by jury without first presenting the claim to a medical review panel. Further, the health care provider will not be protected by the liability limitations contained in the Act as discussed next.⁸

Liability Limitations Under the Act

The Act significantly limits the amount an individual may recover for an act of malpractice. An individual who sues one or more health care providers qualified under the Act may not recover more than \$500,000 for injury or death of any one patient no matter how many qualified health care providers have been sued. Also, each qualified health care provider's liability is limited to \$100,000 for any one occurrence of malpractice.⁹

Thus, although a patient may sue several health care providers whose liability insurance provides coverage well in excess of \$500,000, the patient is still limited to a total recovery of \$500,000, with each health care provider's liability limited to \$100,000. If a patient recovers a judgment or settles with one or more health care pro-

viders in an amount in excess of the total liability of the health care providers (i.e., \$100,000 per health care provider), the patient must obtain the excess from the patient's compensation fund.

The patient's compensation fund is a trust managed by the Commissioner of Insurance that is utilized to pay excess amounts due a patient as a result of a judgment or settlement. The patient's compensation fund is funded

Premiums for Medical Malpractice Insurance in Indiana Are Among the Lowest in the Nation ...

with the surcharge paid by all health care providers who are qualified under the Act. If the patient's settlement or judgment exceeds the liability of the health care providers involved, the patient must submit a claim directly against the fund in order to receive the excess up to the limit discussed above.¹⁰

The limitations on liability have averted, to some extent, the medical malpractice crisis that formerly existed. There are now several major medical malpractice insurance companies issuing policies within Indiana. However, the number of medical malpractice claims being filed is still great, and the surcharge assessed on each health care provider continues to increase. Obviously, as the surcharge increases, the premiums that must be paid by the health care provider will also increase. Fortunately, however, the premiums for medical malpractice insurance paid by health care providers in Indiana continue to be among the lowest in the nation.

Claims Handling Under the Act

For qualified health care providers, formal handling of a medical malprac-

tice claim begins with the filing of a proposed complaint before the Commission of Insurance. This is accomplished by delivering or mailing, by registered or certified mail, a copy of the proposed complaint to the Commissioner of Insurance with the appropriate filing fee. The Commissioner will then forward a copy of the proposed complaint to each health care provider named in the proposed complaint.¹¹ Any claim for medical malpractice, whether in contract or tort, filed against a qualified health care provider must be filed within two years from the date of the alleged act, omission, or neglect, except that a minor under the age of 6 years shall have until his 8th birthday within which to file.¹²

After receiving the proposed complaint, the health care provider will most likely obtain counsel to investigate the claim and prepare the health care provider's defense. Assuming that the proposed complaint is not dismissed or settled after the initial investigation, the next step is to submit the matter to a medical review panel for review of the case and rendering of an opinion as to whether or not malpractice has been committed.

The medical review panel consists of one attorney and three health care providers. The attorney acts as chairman of the panel and in an advisory capacity, but does not vote. It is the duty of the panel chairman to expedite the selection of the other panel members, to convene the panel, and to expedite the panel's review of the proposed complaint. The chairman establishes a reasonable schedule for submitting evidence to the medical review panel, for it is from the evidence presented by the parties that the panel reaches its decision.¹³

The parties may agree to a panel chairman or request that the Clerk of the Supreme Court draw a random list of attorneys from which to select a panel chairman. Normally, the parties will agree to a panel chairman, and will select an attorney who has had experience in the presentation of claims

to a medical review panel. Each party is then entitled to select one health care provider to serve on the panel, the two health care providers thus selected then selecting a third member to serve on the panel.

If there is only one defendant who is an individual (i.e., physician, dentist, registered nurse, etc.), two of the panelists selected must be members of the profession of which the defendant is a member, and if the individual defendant is a health care professional who specializes in a limited area, two of the panelists selected must be health care professionals who specialize in the same area as the defendant.

A party may challenge an opposing party's nomination to the panel without cause, and if two such challenges are made to a party's nomination, the panel chairman will then appoint a panel of three qualified health care providers and the parties will each strike one of the health care providers, the remaining health care provider serving on the panel.¹⁴

After the panel has been formed, the panel chairman will establish a schedule for submission of evidence to the panel. Generally, the claimant will be given 60 to 90 days within which to submit his evidence to the panel, and the health care providers will then be given 30 days following the claimant's submission within which to submit their evidence. The claimant is generally given an additional 15 days in which to submit a reply to the health care providers' submission. The evidence submitted to the panel must be in written form and may consist of medical charts, x-rays, lab tests, excerpts from treatises, depositions of witnesses, and any other form of evidence allowed by the medical review panel. Sufficient copies of all materials are made so that each panel member will have a complete set. The panel has the right and duty to request any additional information necessary to fully evaluate the claim.¹⁵

Before considering any evidence or deliberating with other panel

members, each member of the medical review panel is required to take an oath stating that he will well and truly consider the evidence submitted by the parties and will render his opinion without bias. The oath also states that the panel member has not and will not communicate with any party or representative of a party before rendering his opinion. Neither a party, a party's agent, a party's attorney, nor a party's insurance carrier may communicate with any member of the medical review

Providing Competent Care Is the Only Certain Protection from Medical Malpractice Lawsuits . . .

panel before the panel renders its expert opinion.¹⁶

After reviewing all of the evidence, and after any examination of the panel by counsel representing either party, the panel shall render its expert opinion with respect to whether or not the health care providers met or failed to meet the appropriate standard of care as charged by the claimant. The panel renders one or more of the following expert opinions in writing, signed by the panelists:

(a) The evidence supports the conclusion that the defendant or defendants failed to comply with the appropriate standard of care as charged in the complaint;

(b) The evidence does not support the conclusion that the defendant or defendants failed to meet the applicable standard of care as charged in the complaint;

(c) That there is a material issue of fact, not requiring expert opinion, bearing on liability for consideration by the court or jury; and/or

(d) The conduct complained of was

or was not a factor of the resultant damages. If so, whether the plaintiff suffered: (i) any disability and the extent and duration of the disability, and (ii) any permanent impairment and the percentage of the impairment.¹⁷

Each party has the right to convene the panel at a time and place agreeable to the members of the panel. Upon convening the panel, each party has an opportunity to question the panel concerning any matter relevant to the issues to be decided by the panel. The chairman of the panel presides at all meetings, and all meetings are informal. Convening of the panel generally gives the attorneys an opportunity to question the panel members as to their opinions, the evidence presented, and any bias they may have.¹⁸

After the panel renders its opinion, it is necessary for the claimant to determine whether or not he will proceed with a formal lawsuit in the courts. Even if the medical review panel finds in favor of the health care providers and against the claimant, the claimant may still file a formal complaint in the courts.

The report of the expert opinion reached by the medical review panel is admissible as evidence in the action brought by the claimant in a court of law, but the expert opinion is not conclusive and either party shall have the right to call any member of the medical review panel as a witness.¹⁹ However, in order for the claimant to prosecute his action in a court of law, the claimant must have expert medical testimony establishing the standard of care of the health care provider and the manner in which the health care provider's conduct deviated from the standard of care.

Thus, if the medical review panel opinion is adverse to the claimant and the claimant does not present expert medical testimony, the claimant's action will fail and the claim should ultimately be dismissed by the court.²⁰

Whether the claim is pending before a medical review panel or in a court of law, the issue to be decided is the

The negligence may consist of doing some act which the health care provider should not have done under the circumstances, or the failure to do something which the health care provider should have done under the circumstances.²¹ The standard of care (i.e., what the health care provider should or should not have done) must be established by expert medical testimony, for the standard of care is generally beyond the knowledge and understanding of laymen.²²

3. Ind. Code § 16-9.5-1-1(a)(2) through (7).
4. Ind. Code § 16-9.5-2-6.
5. Ind. Code § 16-9.5-9-2(a).
6. Ind. Code § 16-9.5-9-2(b).
7. Ind. Code § 16-9.5-9-2.1.
8. Ind. Code §§ 16-9.5-1-5, 6.
9. Ind. Code § 16-9.5-2-2.
10. Ind. Code §§ 16-9.5-4-1, 2, 3.
11. Ind. Code § 16-9.5-9-1.
12. Ind. Code § 16-9.5-3-1.
13. Ind. Code § 16-9.5-9-3.
14. *Id.*
15. Ind. Code §§ 16-9.5-9-4, 6.
16. Ind. Code § 16-9.5-9-4.
17. Ind. Code § 16-9.5-9-7.
18. Ind. Code § 16-9.5-9-5.
19. Ind. Code § 16-9.5-9-9.
20. *See Marquis v. Battersby*, 443 N.E.2d 1202 (Ind. App. 1982); *Bassett v. Glock*, 174 Ind. App. 439, 368 N.E.2d 18 (1977).
21. *Id.*
22. *Id.* Indiana still holds to the locality rule which requires that the health care provider's conduct be measured by the standard of health care providers in the same or similar locality. Many states no longer hold to the locality rule.

ISMA Constitutional Amendment

As required by Article X (Amendments) of the ISMA Constitution, INDIANA MEDICINE is publishing the following ISMA resolution for the second time prior to its being resubmitted and voted on by the 1988 House of Delegates. The language is contained in Resolution 87-12 (Mission Statement—ISMA Constitution), introduced last year by the Future Planning Committee. The resolution was referred to Reference Committee 2 and was subsequently "adopted as amended" by the 1987 House of Delegates. It was published for the first time in the January 1988 issue of INDIANA MEDICINE, pages 75-76. The resolution follows:

Whereas, The ISMA Constitution contains the following mission statement:

Article II—Purposes

"The purposes of this Association shall be to federate and bring into one compact organization the medical profession of the state of Indiana, and to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education; to promote friendly relations among physicians; to protect its members against imposition; and to enlighten and direct public opinion in regard to the great problems of medical care and public health so that the profession shall become more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life."

Whereas, This statement does not completely coincide with the directions that ISMA has taken in the past decade and it is not completely relevant in to-

day's dramatically changing medical practice environment, and

Whereas, The current mission statement over-emphasizes ISMA's activities and expertise in scientific and educational areas (activities that can be better handled by the medical school, specialty societies and hospitals), and

Whereas, The current mission statement notes the social role of the Association, which for many members has been supplanted by other organizations, and

Whereas, The statement makes no explicit mention of ISMA's role of representing physicians, one of the Association's most recognized activities of recent years, therefore be it

RESOLVED, That Article II—Purposes, of the ISMA Constitution, be modified to read:

"The Indiana State Medical Association shall diligently serve its members so that they can better care for their patients and the public and thereby add to the quality and comfort of life. The goals of the Association to accomplish this mission are:

- A. Organize the medical profession in Indiana and to unite with other medical societies to participate in the American Medical Association;
- B. Commit to the active support of medical education at all levels in order to advance medical knowledge and medical science;
- C. Represent members' interest in the governmental, public, and private sectors;
- D. Inform physicians and the public about health care issues;
- E. Promote effective freedom of choice for patients, physicians, and the public; and
- F. Protect its members and their patients from imposition."

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PRECISE PATIENT ACCOUNTING

Jack Valancy's Management Notes for Physicians

HELL HATH NO FURY like a patient incorrectly billed, except possibly a physician who loses a patient as the result of a billing error.

Patient accounting is essential to the financial well-being of your practice. The system should run smoothly and unobtrusively—never complicating the physician-patient relationship. In many practices, however, patient accounting is anything but smooth and unobtrusive, and matters that should be routine are controversial.

Precise patient accounting rests on financial policies that are consistent with the physician's practice philosophy, on clear communications, and on effective internal systems.

Financial Policies

Financial policies are the framework of the business relationship between you and your patients. Consider the nature of your practice and your preferences when you formulate financial policies. It's crucial to make decisions about these aspects of your practice:

- *When payment is expected.* An increasing number of physicians prefer patients to pay when service is rendered. Such a policy is most appropriate for office visits, but it can get complicated if you participate in health insurance programs, if some services are covered by the patient's health insurance (whether or not you participate in the program), if the practice prepares and submits health insurance claims, or if some patients are entitled

to special treatment. Should patients be asked to pay all fees or just those that might not be covered by insurance? Are there some patients who should never be asked for payment?

- *Participation in health insurance programs.* Medicare, Blue Shield, and a host of Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs) offer physicians the privilege of becoming participating providers. Typically, reimbursement is less than the physician's regular fees. Will this be offset by increased patient volume? Will current patients who become subscribers of a plan transfer their care if you do not participate? Will it be easier to receive payment directly from the insurance plan than from the patient?

- *Preparation of insurance claims.* Physicians are obligated to assist patients in obtaining health insurance reimbursement. How far does this obligation extend? Should you merely provide the patient with an encounter form that identifies the practice and contains the patient's diagnosis, procedure(s) performed, and fee? Will patients transfer to a physician who provides more help? Should the practice prepare and submit claim forms for any and all insurance plans? Should the practice accept assignment of insurance benefits? When should the patient be expected to pay?

- *Collection of delinquent accounts.* When should a patient's account be considered delinquent? What kind of collection activities are appropriate? Speaking with patients in the office? Telephone calls? Letters? Should these tasks be done by the practice's staff or

by an outside agency? Should patients with seriously delinquent accounts be discharged from the practice?

Clear Communications

- *Tell your staff.* It's essential that your staff understands your practice's financial policies. Meet with them to review your ideas. Explore how policies will shape procedures. Try to uncover weak spots, such as an assistant who is too shy to ask for payment, or one who is too busy to prepare more insurance claims. It's best to resolve these snags before they become problems. Finally, put your financial policies and procedures in writing to prevent misunderstandings.

- *Tell your patients.* Inform patients about your financial policies and procedures by describing them in your general information brochure. You also might want to create separate brochures, such as one that describes in detail the practice's and patient's responsibilities for handling Medicare claims.

In order to avoid problems and embarrassment, your staff should explain your practice's financial policies and procedures to each new patient. If possible, this information should be reviewed when the patient is scheduled for a costly elective procedure. Of course, there's no substitute for tact and good judgment. Your staff must know how to communicate your financial policies in a professional manner and when it is appropriate to make exceptions. It is essential, therefore, that everyone who performs patient accounting functions in your practice be qualified and trained.

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Effective Internal Systems

- *Information, please.* Inaccurate and incomplete demographic and insurance information is a leading cause of patient accounting problems. Be sure your staff obtains complete information at, or prior to, the patient's first visit. To make sure you have correct insurance information, photocopy the patient's insurance identification card. Your staff should verify and update all information regularly by reviewing it with the patient.

The patient information form can include a statement to be signed by the patient authorizing the practice to

"It Is Essential That Everyone Who Performs Patient Accounting Functions Be Qualified and Trained"

release information as necessary to obtain insurance reimbursement. If you accept assignment of benefits, a statement authorizing payment directly to the practice can be included, as well. Having these signed statements on file eliminates the need for the patient to sign individual insurance forms. Just enter "signature on file" in the signature blocks.

- *Encounter forms.* An encounter form (also called a superbill, charge ticket, or routing slip) eliminates the risk of a member of your clerical staff misinterpreting clinical notes in the patient's chart. The encounter form should contain the patient's name, diagnosis, procedure(s) performed, and fee. Preprint the most common diagnoses and procedures, leave space for writing in less common ones. Most physicians do not print their fees on encounter forms; they either enter them by hand or have an assistant do it.

Use the ICD.9.CM diagnosis codes and the CPT procedure codes. (Code books are available from the U.S. Government Printing Office and from the American Medical Association, respectively.) If you don't enter the codes on patients' insurance claims, the insurance carriers' clerks will enter them (possibly incorrectly), or the claim will be rejected entirely.

Incorrect coding could cost you and your patients thousands of dollars per year. Check with the insurance program's Provider Relations department if you are uncertain about the correct code to use for a particular procedure. Many programs have idiosyncratic coding requirements, and some use systems other than CPT.

- *Payments from patients.* A copy of the encounter form is presented to the patient at the end of the visit and is the first bill he or she receives. It should contain at least the services performed and the fee charged. If the patient pays before leaving, the encounter form can also serve as a receipt.

Signs alone do not induce patients to pay at the time of service. Everyone thinks the sign refers to other patients, but not to them. If you expect patients to pay at the time of service, the most effective method of implementing this financial policy is to say: "Mr. Smith, the fee for today's visit is \$35." If the patient protests, your assistant can remind him of the policy. If the patient responds that he does not have enough cash or a check, your cashier can offer to charge the balance to his bank card. (You'll pay a 3-8% fee for this service, but it simplifies your patient accounting system.) If the patient still demurs, or makes a partial payment, your assistant can give him a return envelope and ask that he mail a check as soon as he gets home.

Bills are customarily mailed to patients on a monthly basis. They must be accurate, neat, professional-looking, detailed, and understandable. If the practice submits insurance claims or accepts assignment of insurance

benefits, this should be noted on the bill with appropriate instructions to the patient about the amount due.

- *Paperwork, paperwork.* If you choose to prepare health insurance claims, be sure your staff understands each company's requirements. Most will either provide you with their own claim forms or accept a HCFA 1500 universal insurance claim form, eliminating the need to rely on patients to supply their own forms.

Since each plan is different, it's a good idea to compile a reference book of key information such as authorization for treatment, preadmission certification, limits on services and non-covered services, deductible and copayment amounts to be received from the

"Inaccurate, Incomplete Demographic and Insurance Information Is a Leading Cause of Patient Accounting Problems"

patient, and claim preparation and submission procedures.

Contact each insurer's Provider Relations department to obtain claim processing instruction manuals, newsletters, and information about education programs for medical office assistants.

Keep track of the services you provide to each health insurance plan's subscribers and the payments you receive. Also compile information on how easy the plan is to work with: speed of receiving payments, accuracy of payments, requests by the plan for extra information about services provided, and so on. After working with the plan for a while, you'll have a clear picture of whether it will be worthwhile for you to establish, continue, or terminate a participating provider agreement.

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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Cervical Cancer

CONTINUED FROM PAGES 393-397

1. The incidence of invasive cervical cancer as compared to 30 years ago is:
 - a. Increased
 - b. Decreased
 - c. About the same
2. The incidence of premalignant abnormalities of the cervix as compared to 30 years ago is:
 - a. Increased
 - b. Decreased
 - c. About the same
3. False-negative rates for Pap smears are most often said to be:
 - a. Less than 5%
 - b. From 5% to 50%
 - c. Over 50%
4. The first Pap smear should be obtained:
 - a. When the patient is 21 years old
 - b. When the patient is symptomatic
 - c. When the patient is sexually active, or 18 or older
5. The sampling of which of these areas is most often deficient?
 - a. The portio of the cervix
 - b. The cervical canal
 - c. The vaginal pool
6. Which of the following provides the best fixation for cytologic material?
 - a. Formalin
 - b. Ether
 - c. Ethyl alcohol 95%
7. Which of the following would be equally serious?
 - a. Pap I and benign atypia
 - b. Pap III and moderate dysplasia
 - c. Pap II and carcinoma in situ
8. A keratinizing dysplasia most often is found
 - a. High in the endocervical canal
 - b. At the junction of the squamous and columnar epithelium
 - c. In the endometrium
9. The cervical cancer death rate may be most effectively reduced by
 - a. Doing yearly examinations on all women over 18
 - b. Performing more radical surgery
 - c. Expanding the nation's radiotherapy facilities

APRIL CME QUIZ Answers

Following are the answers of the CME quiz that appeared in the April 1988 issue: "Vision Screening for Motor Vehicle Operators."

- | | |
|--------|-------|
| 1. d | 6. c |
| 2. d,e | 7. b |
| 3. c | 8. d |
| 4. c | 9. b |
| 5. b | 10. c |

10. Atypical reserve cell hyperplasia is
 - a. Treated with topical sulfa cream
 - b. Of serious concern and further studies should be planned
 - c. Indicates uterine decensus

Answer sheet for Quiz: (Cervical Cancer)

- | | |
|----------|-----------|
| 1. a b c | 6. a b c |
| 2. a b c | 7. a b c |
| 3. a b c | 8. a b c |
| 4. a b c | 9. a b c |
| 5. a b c | 10. a b c |

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

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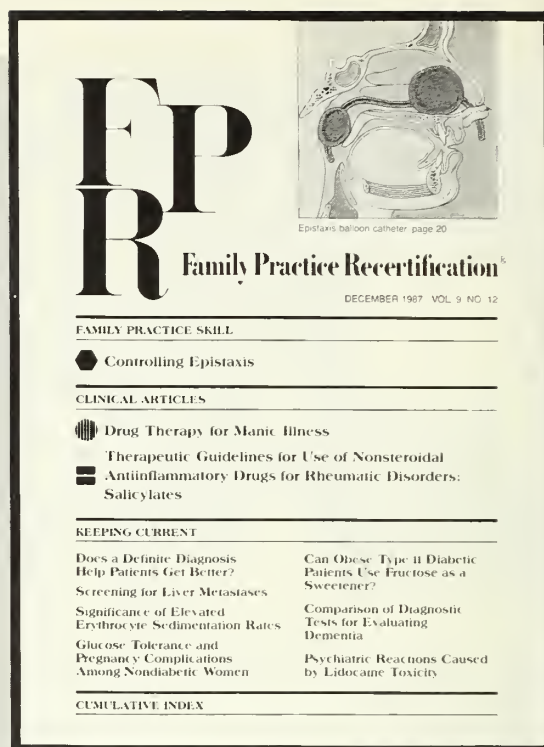
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AUXILIARY REPORT

Ann Wrenn, Bloomington
ISMA Auxiliary President 1988-89

Serving as president of the Indiana State Medical Association Auxiliary is an honor, a challenge, and an opportunity to help make this state a better place in which to live. The following individuals will serve on the 1988-1989 ISMA-A state board:

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First vice-president: Rod Ashley (Susan Rogers, M.D.), Marion.

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Physician Assistance Commission: Carol Bubb, (Mrs. Michael), Indianapolis.

Public Relations Commission: Lura Stone (Mrs. Robert), Ligonier.

IMPAC Board: Vivian Priddy (Mrs. Marvin), Fort Wayne.

This state auxiliary will provide service to the ISMA by promoting its pro-

grams, priorities and goals. We will emphasize the four areas of concern which we concentrated upon last year: adolescent health issues, legislation, support for medical families, and AMA-ERF. We will contact all members within Indiana through our state newsletter, the Pulse, through leadership training seminars, and through the individual county chairmen. We will, again, participate in the legislative alert system with the ISMA.

While providing all of these opportunities, the Auxiliary will emphasize its support systems for medical families. There seem to be so many challenges in our daily lives that it is very important that we listen and support one another! Malpractice, mandatory assignment, Medicare, insurance forms, accounting, teen-age pregnancy, suicide, depression, etc. Somehow we must all maintain a balance in our lives between personal commitment and group involvement. The ISMA Auxiliary provides the physician's spouse with the opportunity to serve the community and the family while supporting its individual members.

We look forward to the new auxiliary year with energy, excitement and enthusiasm!

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D., Indianapolis

ELEVENTH ANNUAL UPDATE in Internal Medicine: An Intensive Review, Wednesday, May 18, 1988, University of Texas Southwestern. Afternoon session, Hematology-Oncology; featured speakers are: "Medical Oncology," Eugene P. Frenkel, M.D.; "Hematology," Richard G. Sheeham, M.D.; Selected Topics in Hematology/Oncology, Roger Fleischman, M.D.; "New Diagnosis Techniques in Radiology," Robert W. Parkey, M.D. To obtain more information contact: Ann Parchem, Continuing Education Division, (214) 688-2166.

TOLEDO UROLOGIC SOCIETY, Toledo, Ohio, Bladder Cancer Symposium. Friday and Saturday, June 24 and 25, 1988. Sponsored by: American Cancer Society, Medical College of Ohio, and St. Vincent Medical Center. Registration begins at 7 a.m.; subjects to be presented are: Basic Principles of Bladder Cancer; Management of Superficial Disease; Invasive Bladder Cancer; Single Modality Therapy; Invasive Bladder Cancer: Combination Therapy.

Participants will be able to define and discuss state of the art methods for management, support and treatment of patients with bladder cancers. Speakers will emphasize the historical perspectives and epidemiology, management of superficial disease, single modality therapy for invasive bladder cancer, and combination therapy for invasive bladder cancer. For registration information write: Becky Leknhardt, C.M.P., Department of CHE, St. Vincent Medical Center, 2213 Cherry St., Toledo, Ohio 43608. Deadline is June 20, 1988.

SECOND INTERNATIONAL CONGRESS on Cancer Pain, July 14-17, 1988. The purpose is threefold: 1) to provide an overview of recent advances in the field of pain and cancer, 2) to act as an educational resource with the publication of the proceedings, and 3) to serve as a forum for international cooperation for the WHO Cancer Pain Relief Program.

A series of 30 sessions on various aspects of pain and cancer will provide the attendee with the opportunity to interact with the faculty in a small group atmosphere and discuss specific clinical and research issues. Participants can register for six sessions. The proceedings of the Congress will be published in the Raven Press' *Advances in Pain Research and Therapy*. For congress registrants who pre-order, the book is available at a discount price of \$55. This continuing medical education activity meets the criteria for 20 credit hours, Category 1 of the Physician's Recognition Award of the American Medical Association. For further information, contact Mary Calloway, Executive Director, Second International Congress On Cancer Pain, Memorial Hospital, 1275 York Ave., Box 52, New York, N.Y. 10021 — (212) 794-7456.

EPIDEMIOLOGY, 23rd GRADUATE SUMMER SESSION, JULY 10-29, 1988. To be offered at the University of Michigan School of Public Health. Epid # 704 Epidemiology of Cancer (2 credit hours) is a three-week course to be conducted daily from 3:30 p.m. - 5 p.m. This course will review basic concepts in the biology, epidemiology and prevention of cancer.

The role of genetic factors, tobacco, alcohol, radiation, chemicals, pharmaceuticals, nutrition and viruses will be reviewed.

One goal of the course will be to enable students to identify important questions and methodological approaches for future research. Prerequisites: Introductory level course in epidemiology in an approved school of public health or equivalent course. Applications must be received by June 10. For more information, call (313) 764-5435.

NEW PAMPHLET, "Intimacy, Sexuality and Hemophilia," has been published by the National Resource and Consultation Center for AIDS and HIV Infection. This pamphlet replaces the September 1985 publication, "Intimacy and Sexual Behavior." The National Hemophilia Foundation would like to acknowledge the fine efforts of Stephen B. Levine, M.D., and David P. Angle, M.D., for writing this publication with sensitivity, simultaneously incorporating the most up-to-date scientific facts related to AIDS and HIV infection as they pertain to persons with hemophilia. "Intimacy, Sexuality and Hemophilia" contains sexually explicit material.

There is space provided on the back of the pamphlet for you to write the address and telephone number of the appropriate treatment center and nearest chapter as a resource for patients and families receiving this material. Additional free copies of "Intimacy, Sexuality and Hemophilia" can be obtained by contacting your local chapter.

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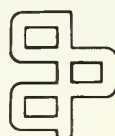
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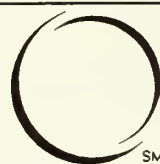
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* Journals reviewed include: *Circulation*, *American Heart Journal*, *Journal of the American College of Cardiology*, *British Heart Journal*, *Chest*, *The American Journal of Cardiology*, *The New England Journal of Medicine*, *Annals of Internal Medicine*, *American Journal of Medicine*, and *The Journal of the American Medical Association*.

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Nursing Honor Society Plans To Build Electronic Library

An International Center for Nursing Scholarship will open in Indianapolis in 1989.

The facility, sponsored by Sigma Theta Tau International, honor society of nursing, will contain a high-tech electronic nursing library. It will serve clinicians, researchers, students, health care consumers and those interested in nursing research and knowledge.

A \$4 million capital campaign, which includes \$2.2 million already secured, began early in 1987. Many local, state and national groups, including Lilly Endowment, Inc., have pledged support of the campaign. Lilly Endowment will match gifts from non-nursing sources on a dollar for dollar basis.

For more information, call Nell Watts, executive officer, Sigma Theta Tau International, 1200 Waterway Blvd., Indianapolis 46202—(317) 634-8171.

Researcher Views Teen Drivers as Risk Takers

Programs aimed narrowly at influencing teenagers to drive safely may need reworking if they fail to recognize the nature of the risk-taking teenager,

according to researcher Richard Jessor, professor of psychology at the University of Colorado.

New programs should address the total lifestyle of such teenagers, who often are involved in a variety of other problem behaviors, such as delinquency, problem drinking and illicit drug use, Jessor said.

Jessor's findings on risky driving and adolescent problem behavior are contained in the current issue of *Alcohol, Drugs and Driving*, which is published by the Alcohol Information Service of the University of California at Los Angeles. They were first presented at a conference held last year by UCLA on the topic "Youth at Risk for Traffic Accidents."

CHAMPUS To Require Abortion Certification

Physicians who perform abortions on CHAMPUS (Civilian Health and Medical Program of the Uniformed Services) patients now will be required to certify in writing that the abortion was induced because the patient's life would have been endangered if the fetus had been carried to term.

The certification from the attending physician is required before the CHAMPUS claims processors will

share the cost of medical services and supplies related to the abortion. In the certification, the physician must specify the life-threatening condition that makes the abortion necessary. Conditions that may be covered include certain malignancies, such as leukemia and breast cancer; kidney failure; congestive heart failure; severe heart disease; and uncontrolled diabetes.

CHAMPUS also announced that it will share the cost of covered psychotherapy provided by mental health counselors who meet CHAMPUS requirements.

Mental health counselors may provide psychotherapy for patients who have a medically diagnosed mental disorder, subject to the referral and supervision of a physician.

Ball State Offers Degree in Wellness Management

Healthy workers save their employers money by filing fewer insurance claims and taking fewer sick days, so more firms are investing in wellness programs to maintain a healthy work force.

Unfortunately, many corporations have trouble finding professionals with backgrounds in both health and management to run their programs, says Dr. David Gobble, a professor with the Ball State University Institute for Wellness.

To help alleviate the shortage of trained wellness managers, Ball State will begin offering a new master's degree in wellness management in the fall.

"The increased interest in health is not a passing fad," said Dr. Gobble. "It's an evolutionary force. We are in a whole new era of health awareness."

IBM Donation Used for AIDS Directory

International Business Machines Corp. has contributed \$65,000 to the American Foundation for AIDS Research (AmFAR). The donation will be used by the foundation to publish and distribute a directory of AIDS information materials.

AMERICANS

Commentary

We are so used to calling ourselves "Americans" that it comes as a jolt when some Latin American takes exception to our using this term "too freely" or "inaccurately." For after all, he will say, people in his country are also "Americans."

"Wouldn't it be more proper for citizens of the United States of America to call themselves such?" Or "Norte Americanos?" rather than implying that we are the only "Americans who count" when we call ourselves "Americans" most of the time? These criticisms come at us from countries to the south of us. Countries who have strict construction of their languages

and can't begin to understand the flexibility and force of American English.

Our language, founded in freedom, flows so easily through the business places, halls of science, hospitals, etc. of the world because of its synthesis of flexibility and force. Our words often take their meaning from the context. It is not a precise language, but it "gets the job done"—quickly and easily.

Just as we Americans enjoy our freedom—that we started learning as we drank in our mothers' milk—so does our language move with ease and joy—confounding the strict constructionists who can't understand this synthesis of freedom and power.

We Americans are truly "E Pluribus Unum," or "One out of Many."—R.J. Noveroske, M.D., Newburgh

National Study Shows Drinking on Decline Among College Students

Drinking among college students is on the decline, according to preliminary data from a national study conducted by Professors Ruth C. Engs of Indiana University and David J. Hanson of State University of New York at Potsdam.

The researchers reported a similar decrease in drinking and driving-related problems among this specific age group.

These trends also were reflected in two similar studies made during the past decade by Engs, an applied health scientist, and Hanson, a sociologist. Their sample involved more than 6,000 students at 37 universities.

The percentage of students continuing to drive after knowing they already had consumed too much alcohol was 41% in 1982, 39% in 1985 and down to 35% in 1988, they said.

Drinking while driving dropped from 49% in 1982, to 44% in 1985 and to 38% in 1988.

The study also revealed that 84% said in the 1982 and 1985 surveys that they consumed alcohol at least once a year. This figure fell to 80% in the latest study.

Researchers speculated on the reasons for the decrease, including media attention to drinking and driving issues, campus alcohol education programs, greater awareness of health and fitness, and natural cycles of alcohol consumption.

For the Asking . . .

• A National Institutes of Health (NIH) consensus development statement on neurofibromatosis has been issued. The report was prepared by a panel of experts that considered scientific evidence presented at a Consensus Development Conference at NIH. It contains recommendations and conclusions concerning neurofibromatosis. Free, single copies of the statement are available from Michael J. Bernstein, Office of Medical Applications of Research, National Institutes of

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

Health, Building 1, Room 216, Bethesda, Md. 20892.

• "Answers About AIDS" is the title of a newly updated report published by the American Council on Science and Health (ACSH). The 59-page booklet includes information on the prevention of the disease. A copy of the report may be obtained by sending \$2 plus 39 cents for postage and a self-addressed mailing label to AIDS Report, ACSH, 47 Maple St., Summit, N.J. 07901.

• The Center for Research in Ambulatory Health Care Administration (CRAHCA) has released its annual "Cost and Production Survey Report" for 1987. The report is based on information and statistics provided by the members of the Medical Group Management Association (MGMA). The report assists the manager in the financial management of a medical group by providing statistics on total group revenue, salary expenses, total overhead, fee-for-service and prepaid charges, employee staffing and collection percentages. Also included are statistics reported for 12 single specialty groups and a detailed analysis of multispecialty groups showing the effect of size, prepayment and geographic region on expenses and revenues. For information on obtaining the report, write to Order Department, Medical Group Management Association, 1355 S. Colorado Blvd., Suite 900, Denver, Colo. 80222.

• The American Society of Safety Engineers (ASSE) has published a 270-page study designed to create a more effective system of occupational safety and health regulation, a system based on cooperation rather than confrontation. The book, "Regulating Safety and Health: A Working Model," was written by Leo Teplow, former vice-president of industrial relations for the American Iron and Steel Institute. To obtain the report, write to ASSE, Dept. F, 1800 E. Oakton St., Des

Plaines, Ill. 60018 or call (312) 692-4121.

• The American Council on Science and Health has published a 40-page report on "Biotechnology: An Introduction." The report says that biotechnology, with appropriate safeguards, can be a great boon to mankind. Medical advances made possible by biotechnology include new diagnostic tests, artificial hormones, immune system regulators, enzyme drugs, safer vaccines and potential future treatments for heritable diseases, according to the ACSH. To obtain a copy of the booklet, send a self-addressed, stamped (66 cents postage), business-size envelope to Biotechnology Report, ACSH, 47 Maple St., Summit, N.J. 07901.

Short Takes . . .

• The Update edition of the "Marion Managed Care Digest 1987" published by Marion Laboratories has been released. The publication, like the first issue, focuses on HMOs but from a financial perspective. The 1988 annual editions for both the HMO and PPO markets will be published in June and July, respectively.

• Tests to help physicians make the differential diagnosis are explored in a medical telecourse produced by the Network for Continuing Medical Education (NCME). "Learning Disabilities: Differential Diagnosis" was released last month to 800 subscribing hospitals and medical schools throughout the country. Physicians have a role in the early recognition of a learning disability so that the child may be taught how to compensate for it. Disabilities may be due to visual or hearing impairments, emotional and psychological disorders or minor brain dysfunction.

• The seventh biennial John Muir Medical Film Festival will be held June 18 to 25 in Walnut Creek, Calif. About 400 entries are expected to be submitted for judging. Co-chairmen of this year's festival are Shirley Jones of the television series "Slap Maxwell" and Art Ulene, M.D., of NBC's "Today" show. For information, call (415) 947-5303.

NEWS NOTES

Here and There . . .

Dr. Phillip E. Hodonos of Michigan City has been named associate medical director at Lakeside Health Center.

Dr. Mark W. Braun, a pathologist at Bloomington Hospital, spoke on "AIDS: Where We Stand Today" at a March meeting of the Local Council of Women in Bloomington.

Dr. Richard S. Witham of Martinsville and **Dr. Allan M. Miller** of Bloomington spoke during Morgan County Memorial Hospital's four-session March program for cancer patients and their families.

Dr. Henry D. Covelli of Anderson and **Dr. Randall C. Blake** of Anderson were team captains for The Doctors' Shoot-out for Cancer, a charity basketball game played in February at Anderson High School. Members of Dr. Covelli's team included **Dr. Stephen J. Wright** of Lapel, **Dr. Mukund D. Patel** of Anderson, **Dr. Timothy L. Hobbs** of Anderson, **Dr. Roger E. Brockman** of Indianapolis, **Dr. William J. Kopp** of Anderson, **Dr. Phillip E. Goshert** of Anderson, **Dr. William C. Van Ness** of Summitville, **Dr. Marc E. Weinbaum** of Anderson and **Dr. Terry J. Kyle** of Rushville. Members of Dr. Blake's team included **Dr. William J. Bowen** of Anderson, **Dr. Andrew F. Marciniak** of Anderson, **Dr. Charles Howe** of Anderson, **Dr. Joseph F. Woschitz** of Indianapolis, **Dr. Alan S. Ray** of Anderson, **Dr. Robert W. McCurdy** of Anderson, **Dr. Lawrence E. Allen** of Anderson, **Dr. Joseph C. Copeland** of Anderson and **Dr. James E. Currier** of Anderson. **Dr. Paul L. Ramsey** of Anderson and **Dr. Charles R. King** of Anderson shared scoring duties. **Dr. Gerald P. Irwin** of Alexandria was the announcer.

Dr. N. Phillip Shelton of Vincennes has been named a fellow of the American Academy of Family Physicians.

Dr. Max E. Sneary of Avilla was named Avilla's Citizen of the Year at the annual Chamber of Commerce banquet in February; he has practiced medicine in Avilla since 1957.

Dr. Randall A. Lee of Martinsville spoke at a February program on high blood pressure at Morgan County Memorial Hospital.



Three St. Francis Hospital medical staff physicians, (from left) Drs. Gerald Braverman, Bruce Bender and Robert Daly, have passed the Critical Care board examinations sponsored by the American Board of Internal Medicine. The physicians are partners with Internal Medicine/Critical Care, Inc.

Dr. William E. Weber Jr. of Bloomington spoke at three recent cosmetic surgery seminars at Bloomington Hospital.

Dr. Lewis R. Domke Jr. and **Dr. James P. Beck** of Washington, Ind., presented the Healthscope Series of the American College of Physicians at Daviess County Hospital in February.

Dr. James E. Buchanan of Auburn has been named chief of staff at DeKalb Memorial Hospital.

Dr. Ernest C. Mirich, a Merrillville cardiologist, has been named president of the medical staff of St. Anthony Medical Center in Crown Point; **Dr. Oscar G. De La Paz** of Merrillville is the president-elect, and **Dr. Nicholas C. Retson** of Merrillville is the secretary.

Dr. William R. Nunery, an oculoplastic surgeon in Indianapolis, recently addressed the Laval University in Quebec, Canada, by invitation; he presented lectures concerning ophthalmic Graves' disease, blepharoplasty surgery and orbital trauma.

Dr. Myron H. Weinberger, director of the Hypertension Research Center at

the Indiana University School of Medicine, spoke at a March seminar about hypertension at Reid Memorial Hospital; he discussed hypertension and other cardiovascular disease risk factors.

Dr. Frank J. Amodio and **Dr. David W. Howard** of Evansville spoke on allergies and asthma during a March conference in Jasper for health care professionals.

Dr. William H. Beeson, an Indianapolis facial plastic surgeon, was course director for a facial plastic surgery seminar held in Indianapolis in March.

Dr. Michael K. Crider of Muncie has received his dermatopathology certification from the American Board of Dermatology and the American Board of Pathology.

Dr. Jerry L. House of Indianapolis recently lectured at the otolaryngology review course in Chicago; his topics included "Cochlear Implants and Acoustic Neuromas." He also was recently elected to the American Neurotology Society.

Dr. Edward Ross of Indianapolis has been appointed a member of the Radiologic Devices Panel, Center for Devices and Radiologic Health, Food and Drug Administration; his term ends Jan. 31, 1992.

Dr. Barbara K. Siwy of Indianapolis, assistant professor of plastic surgery at the Indiana University School of Medicine, spoke on "Breast Reconstruction After Breast Cancer Therapies" during March in Huntingburg; she spoke on "Aesthetic and Reconstructive Surgery of the Breast" at the 1988 Symposium of Mammogram and Breast Ultrasound in April at the Lincoln Hotel in Indianapolis.

Dr. Jay L. Grosfeld of Indianapolis recently was elected president-elect of the Central Surgical Association; he will become president in March 1989. Grosfeld, who served as secretary of the association from 1985-1988, is chairman of the department of surgery at the Indiana University Medical Center and director of the section of pediatric surgery at Riley Children's Hospital.

Dr. Louis F. Romain, a Fort Wayne neurologist, discussed developments in the care and treatment of Parkinson's patients during a March meeting of the Parkinson's Support Group in Fort Wayne.

Dr. Clemente F. Oca and **Dr. Jose C. Torres** of Jeffersonville recently attended the Sixth Annual International Obesity Surgery Symposium in Memphis, Tenn.; Dr. Torres presented a paper, and both physicians served on a panel discussion.

Dr. Kenneth A. Smith of Fort Wayne spoke on "Medical Management of Arthritis" during a public forum on arthritis in March in Fort Wayne.

Dr. Kurt H. Stiver of South Bend discussed "A Physician's Perspective" during a March meeting of the Cesarean Prevention Movement/Vaginal Birth After Cesarean Group of Northern Indiana.

Dr. Randolph W. Lievertz of Indianapolis presented a continuing medical education conference to the medical staff of the Naeve Hospital in Albert Lea, Minn., in March; the conference topic was "The Empirical Use of Antibiotics."

Dr. George W. Hicks of the Eye and Ear Institute in Indianapolis recently presented a paper on "Delayed Endolymphatic Hydrops" at the Middle Section, Triologic Society Meeting in Ann Arbor, Mich.

New ISMA Members

Felipe P. Ambas, M.D., Logansport, general practice.

Rodney J. Anderson, D.O., Indianapolis, general surgery.

Robert N. Anfield, M.D., Indianapolis, family practice.

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David R. Cundiff, M.D., Indianapolis, public health.

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Paul E. Driscoll, M.D., Beech Grove, family practice.

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Are You Visible?

by Arthur R. Pell, Ph.D.

Consultant, Dale Carnegie & Associates, Inc.

When Josh Campbell learned that he was not even being considered for the promotion to head his department, he was crushed. His immediate boss for the past five years, Todd Perkins, had assured him that, when he retired, he would recommend Josh for the position. Unfortunately, Todd had died last month, two years before his planned retirement, and the company had hired a new manager from outside the company.

Why didn't they consider Josh? Nobody, other than Todd, knew Josh's capability. Indeed, none of the higher level managers even knew Josh. He was invisible. In most organizations there are many highly competent people, who like Josh, will never make much progress because nobody knows who they are. In order to move up in one's career, one must be visible to managers other than just one's immediate boss.

How does a person become visible? The first requirement is competence. If you are incompetent and visible, it works against you. Josh was competent, but competence alone is not enough. When Josh attended meetings with his boss, he never contributed his ideas. If he had a comment to make, he jotted it down, slipped it to his boss, who made the comment. When asked why he didn't present his own ideas, he admitted that he was afraid to speak in front of other people.

Speak Up

One of the most effective ways of making yourself known to the executives in your organization is to actively participate in the meetings you attend. Most people who are well-rounded in their fields have much to offer. Concern about speaking in public has been identified as one of the most common fears people have. Yet, it is a fear that can be overcome by training and practice. Courses in public speaking are offered in most colleges and special programs such as the Dale Carnegie Course® in Effective Speaking and Human Relations have helped countless people overcome this fear.

Show Interest in Other People's Goals

When Valerie Plunkett was asked to what she attributed her relatively rapid rise in her company, she responded: "My big ears." She elucidated: "I really listen to other people — not only when they talk to me, but when they talk to people around me. Early in my career, I was waiting for a meeting to begin and the man next to me was discussing statistical quality control with another person in the group. Some weeks later, I came across an article on this subject in a trade publication. Remembering the discussion, I clipped the article and sent it to the man who had shown interest in it. He expressed his thanks and told another manager how considerate I had been. As that little act meant so much to him, I decided to make a practice of sending copies of articles to various people in the company. I soon developed a reputation of being that thoughtful person who was always looking for information that could be useful to others. This led to my being requested by executives to transfer to their departments and each transfer was an advancement in my career."

Volunteer

When Bill graduated from college, he joined the Personnel Department staff in a Fortune-500 company. It didn't take him long to realize that there were at least twenty other bright, young people with whom he would be competing for advancement. He had to do something other than just being an outstanding performer in his job to beat his competition.

Some months later, Bill volunteered to chair the annual fund raising drive for the United Way. In this assignment he visited every department in the headquarters office, and met most of the executives and officers of the company. Each year, for the next three years, Bill chaired the drive.

One of the vice presidents of the company was impressed with Bill's dedication to his assignment and the professionalism in which he handled it. He discussed a job he wished to create in his department and that Bill might be the right person for it. Bill accepted his offer. Now, instead of being one of many competitors for advancement in the Personnel Department, he became the protégé of a senior executive, with a clear career path ahead of him.

Become Active in Professional Associations

Darlene Abboitt was ready to quit her job in the marketing department of one of America's most prestigious consumer goods companies. She just couldn't see herself moving ahead with so many good people competing with her for advancement. Rather than give up, she decided that she had to become visible to the top people in her department so they would recognize her potential.

Darlene was a member of the local chapter of the American Marketing Association. To implement her plan, she agreed to serve on the program committee. Her first assignment was to find a speaker for the April meeting. Her choice — The Vice President of Marketing of her company. Although she had never spoken to this executive and was certain that he did not even know who she was, Darlene invited him to be the speaker. He not only agreed to address the meeting, but told Darlene he considered it an honor to be invited. On two occasions prior to the meeting, he called Darlene to discuss the talk. At the meeting, she sat on the dais next to the speaker and introduced him to the meeting. From that time on, Darlene was visible to that vice president and began to make excellent progress in the department.

Other means of becoming visible include writing articles for publication in trade journals, serving as an officer in a trade or professional association and in participating in community activities in which the company has indicated an interest.

Competence and professionalism are basic to success, but no matter how effective you may be, if you are not known to the decision makers in your organization, you may be overlooked. By planning and implementing a program for your own visibility, your opportunities for career growth should increase significantly.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

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Before prescribing, see complete prescribing information in SK&F LAB CO. literature or PDR. The following is a brief summary.

Contraindications: There are no known contraindications to the use of 'Tagamet'.

Precautions: While a weak antiandrogenic effect has been demonstrated in animals, 'Tagamet' has been shown to have no effect on spermatogenesis, sperm count, motility, morphology or in vitro fertilizing capacity in humans.

In a 24-month toxicity study in rats at dose levels approximately 9 to 56 times the recommended human dose, benign Leydig cell tumors were seen. These were common in both the treated and control groups, and the incidence became significantly higher only in the aged rats receiving 'Tagamet'.

Rare instances of cardiac arrhythmias and hypotension have been reported following the rapid administration of 'Tagamet' HCl [brand of cimetidine hydrochloride] injection by intravenous bolus.

Symptomatic response to 'Tagamet' therapy does not preclude the presence of a gastric malignancy. There have been rare reports of transient healing of gastric ulcers despite subsequently documented malignancy.

Reversible confusional states have been reported on occasion, predominantly in severely ill patients.

'Tagamet' has been reported to reduce the hepatic metabolism of warfarin-type anticoagulants, phenytoin, propranolol, chlordiazepoxide, diazepam, lidocaine, theophylline and metronidazole. Clinically significant effects have been reported with the warfarin anticoagulants; therefore, close monitoring of prothrombin time is recommended, and adjustment of the anticoagulant dose may be necessary when 'Tagamet' is administered concomitantly. Interaction with phenytoin, lidocaine and theophylline has also been reported to produce adverse clinical effects.

However, a crossover study in healthy subjects receiving either 'Tagamet' 300 mg. q.i.d. or 800 mg. h.s. concomitantly with a 300 mg. b.i.d. dosage of theophylline [Theo-Dur[®], Key Pharmaceuticals, Inc.],

demonstrated less alteration in steady-state theophylline peak serum levels with the 800 mg. h.s. regimen, particularly in subjects aged 54 years and older. Data beyond ten days are not available. [Note: All patients receiving theophylline should be monitored appropriately, regardless of concomitant drug therapy.]

Lack of experience to date precludes recommending 'Tagamet' for use in pregnant patients, women of childbearing potential, nursing mothers or children under 16 unless anticipated benefits outweigh potential risks; generally, nursing should not be undertaken in patients taking the drug since cimetidine is secreted in human milk.

Adverse Reactions: Diarrhea, dizziness, somnolence, headache, rash. Reversible arthralgia, myalgia and exacerbation of joint symptoms in patients with preexisting arthritis have been reported. Reversible confusional states [e.g., mental confusion, agitation, psychosis, depression, anxiety, hallucinations, disorientation], predominantly in severely ill patients, have been reported. Gynecomastia and reversible impotence in patients with pathological hypersecretory disorders receiving 'Tagamet', particularly in high doses, for at least 12 months, have been reported. Reversible alopecia has been reported very rarely. Decreased white blood cell counts in 'Tagamet'-treated patients [approximately 1 per 100,000 patients], including agranulocytosis [approximately 3 per million patients], have been reported, including a few reports of recurrence on rechallenge. Most of these reports were in patients who had serious concomitant illnesses and received drugs and/or treatment known to produce neutropenia. Thrombocytopenia [approximately 3 per million patients] and a few cases of aplastic anemia have also been reported. Increased serum transaminase and creatinine, as well as rare cases of fever, interstitial nephritis, urinary retention, pancreatitis and allergic reactions, including hypersensitivity vasculitis, have been reported. Reversible adverse hepatic effects, cholestatic or mixed cholestatic-hepatocellular in nature, have been reported rarely. Because of the predominance of cholestatic features, severe parenchymal injury is considered highly unlikely.

likely. A single case of biopsy-proven periportal hepatic fibrosis in a patient receiving 'Tagamet' has been reported.

How Supplied: Tablets: 200 mg. tablets in bottles of 100; 300 mg. tablets in bottles of 100 and Single Unit Packages of 100 [intended for institutional use only]; 400 mg. tablets in bottles of 60 and Single Unit Packages of 100 [intended for institutional use only], and 800 mg. Tiltab[®] tablets in bottles of 30 and Single Unit Packages of 100 [intended for institutional use only].

Liquid: 300 mg./5 ml., in 8 fl. oz. (237 ml.) amber glass bottles and in single-dose units (300 mg./5 ml.), in packages of 10 [intended for institutional use only].

Injection:

Vials: 300 mg./2 ml. in single-dose vials, in packages of 10 and 30, and in 8 ml. multiple-dose vials, in packages of 10 and 25.

Prefilled Syringes: 300 mg./2 ml. in single-dose prefilled disposable syringes.

Plastic Containers: 300 mg. in 50 ml. of 0.9% Sodium Chloride in single-dose plastic containers, in packages of 4 units. No preservative has been added.

ADD-Vantage[®] Vials: 300 mg./2 ml. in single-dose, ADD-Vantage[®] Vials, in packages of 25.

Exposure of the premixed product to excessive heat should be avoided. It is recommended the product be stored at controlled room temperature. Brief exposure up to 40°C does not adversely affect the premixed product.

'Tagamet' HCl [brand of cimetidine hydrochloride] injection premixed in single-dose plastic containers is manufactured for SK&F Lab Co. by Travenol Laboratories, Inc., Deerfield, IL 60015.

* ADD-Vantage[®] is a trademark of Abbott Laboratories.

BRS-TG.L73B

Date of issuance Apr. 1987

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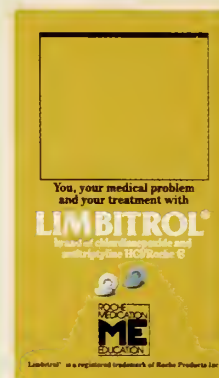
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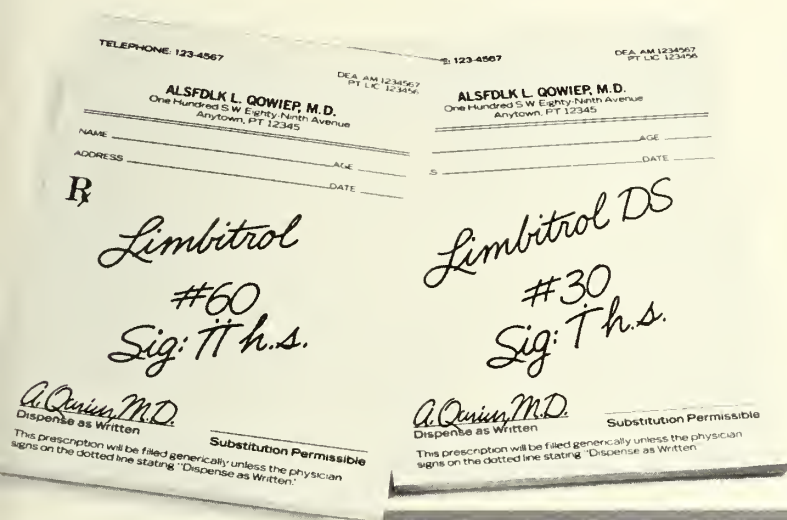
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References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner VP, et al: *Psychopharmacology* 61:217-225, Mar 22, 1979.

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Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: **Cardiovascular:** Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. **Psychiatric:** Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. **Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extra-pyramidal symptoms, syncope, changes in EEG patterns. **Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. **Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. **Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. **Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. **Endocrine:** Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. **Other:** Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

How Supplied: Double strength (DS) Tablets, white, film-coated, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt), and Tablets, blue, film-coated, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose[®] packages of 100; Prescription Paks of 50.



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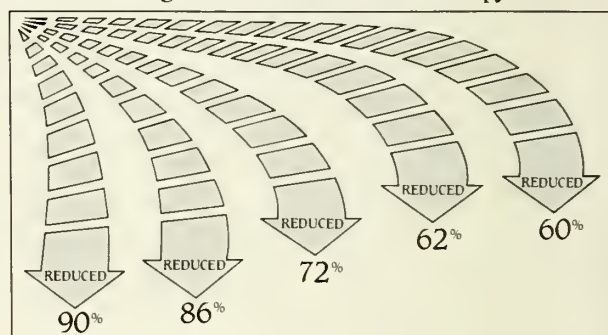
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JUNE 1988

VOL.81

NO.6

INDIANA MEDICINE

The Journal of the Indiana State Medical Association

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Vol. 81, No. 6
JUNE 1988

Devoted to the interests of the medical profession and public health in Indiana since 1908.

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USPS 284-440
ISSN 0746-8288

POSTMASTER: Send address changes to
Indiana State Medical Association, c/o
Membership Department, 3935 N. Meri-
dian St., Indianapolis, Ind. 46208.

INDIANA MEDICINE is published
monthly by the Indiana State Medical
Association. Second-class postage paid
at Indianapolis, Ind.

Address correspondence relating to
editorial material, advertising or
subscriptions to: INDIANA MEDICINE,
3935 N. Meridian St., Indianapolis, Ind.
46208. Phone (317) 925-7545.

Annual subscription rates: \$20
domestic, \$22 Canada, \$23 foreign.
Medical library rates: \$18 domestic, \$20
Canada, \$21 foreign. Full-time Indiana
medical students—\$10. Single copies not
available. Subscriptions are renewable
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for exclusive publication, subject to
editorial requirements. Publication dead-
line: 1st day of month preceding month
of issue. Instructions for authors avail-
able upon request.

All issues since 1967 are available on
microfilm from University Microfilms In-
ternational, 300 N. Zeeb Rd., Ann Ar-
bor, Mich. 48106. Indexed in Index
Medicus and Hospital Literature Index.

Advertising rates and data available
upon request.

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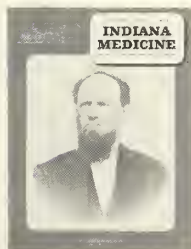
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ABOUT THE COVER

Dr. William Lomax was president of the Indiana State Medical Society in 1856. He is the subject of this month's Medical Museum Notes as well as an article entitled "19th Century Medicine in Grant County." The Lomax photo is taken from *A Medical History of the State of Indiana*, by G.W.H. Kemper, American Medical Association Press, Chicago, 1911.



STETHOSCOPE

EXAMINING STATE & NATIONAL MEDICAL ISSUES

The 10-day payment floor for Medicare bill/claim processing which goes into effect July 1, will change to 14 days Oct. 1. This probably will affect office cash flow. Intermediaries and carriers must pay 95 percent of clean claims within 26 days of receipt in fiscal year '88; 19 days for clean claims submitted by participating physicians.

The AMA will ask the new President to create a Medicare Commission to function like the Social Security Commission.

Misleading information circulated throughout Congress about the AMA's position on physician dispensing. Dr. James Sammons, AMA executive vice president set the record straight: In AMA's view, there's no need for federal legislation. Few physicians dispense drugs on a regular basis and there's no evidence physicians are abusing their dispensing authority, says Sammons. AMA has developed standards to assist physicians in determining when dispensing best serves their patients.

Sen. Malcolm Wallop, R-WY, has introduced a bill (S. 2181) that would permit patients to exempt themselves from present rigid Medicare restrictions on charges. The bill would permit patients to enter into agreements with their physicians not to seek payment under Medicare. AMA has endorsed the concept.

A new Part B Medicare Annual Data service is now available to medical societies. Under the apt acronym, BMAD, the data are obtained from HCFA file records, and can be used to analyze how frequently specific procedures are performed and their related fee reimbursement levels. 1984 and 1985 data are now available. AMA contact: David D. Marcus, Office of Socioeconomic Research Information, AMA, 535 N. Dearborn, Chicago, IL 60610, (312) 645-4342.

HCFA has proposed several changes to regulations governing Peer Review Organizations. Published in the March 16, Federal Register, the proposed changes included AMA's suggestion that PROs use physician reviewers who practice in settings similar to those of physicians whose services are under review.

OSHA Hazard Communication Standards now require physician compliance. Under the regulation, physicians who have employees who may be exposed to hazardous chemicals must provide written notice to employees of chemical hazards that exist in their work setting. Excluded are: drugs in solid form, liquid oral and injectable drugs.

IN INDIANA...

Medicare reimbursement for clinical laboratory procedures may have been inappropriately reimbursed to physicians at 80 rather than 100 percent of the Medicare allowed amount. The inaccurate reimbursements occurred between April 1 and April 21, 1988, due to a computer error. Physicians should check their "Explanation of Medicare Benefits" (EOMB) forms to see if proper reimbursement was made. To request proper reimbursement, make a copy of the EOMB form and send it to K.C. Ryan, Clinical Laboratory Reimbursement, 8320 Craig Street, Suite 125, Indianapolis, IN 46250.

Dr. Woodrow Myers, commissioner of the Indiana State Board of Health, has appointed Dr. William Beeson, Indianapolis, to chair the Advisory Committee on Infectious Waste. Dr. Beeson will represent office-based physicians. The advisory committee will assist the SBH in developing rules for the disposal, treatment and transportation of infectious waste.

HCFA Administrator, Dr. William L. Roper, speaking to state and territorial health officers gathered last month in Indianapolis for their annual meeting: "We need to purchase health care for value...to direct money toward the things that work." Dr. Roper said the public presumption that all doctors are the same is changing. "Not all doctors deliver services of equivalent value."

Dr. Roper shared a panel on quality care with Dr. John E. Wennberg of Dartmouth University; Dr. Dennis O'Leary, president of the Joint Commission on Accreditation of Health Care Organizations; and Dr. Mark Chassin, Rand Corporation.

Dr. Wennberg said the crux of determining if quality care is delivered is that currently there are no methods to justify practice patterns. Funding is needed to develop appropriate methods, he said. Physicians respond when confronted with practice differences, Dr. Wennberg added.

Dr. Chassin cited several studies, in which he's been involved, to indicate that we now have the ability to measure quality of care.

ISMA will join AMPAC and IMPAC to sponsor a Key Contact Training Seminar on Aug. 24. The focus will be on state and federal issues, how to set up key contact programs and how the legislative process works. Political consultant, Michael E. Dunn, will conduct the seminar which will include some role playing exercises geared toward effective lobbying. Luncheon speaker is Rep. Don Nelson, chairman of the Indiana House Public Health Committee.

The day-long seminar will be held at the Embassy Suites North, Indianapolis. Schedule early. Space is limited to 50 participants. Call Susan Grant or Julie Newland at 1-800-382-1721 for more information.

MEDICAL MUSEUM NOTES



CHARLES A. BONSETT, M.D., Indianapolis

AN ARTICLE dealing with the history of medicine in Grant County, Indiana, appears elsewhere in this issue of *INDIANA MEDICINE*. It was prepared by Dr. S. Gopal Raju of Marion. The first physician to prepare such a history was Dr. William Lomax whose article was published in the 1875 issue of the *Transactions of the Indiana State Medical Society*.

Besides writing about the Grant County Medical Society, Doctors Raju and Lomax have in common the fact that through their efforts each provided for a school of higher education. For Dr. Raju it was a school of liberal arts in Anekal-Karnataka, India; for Dr. Lomax, it was medical school for Indiana.

A photograph of Dr. Lomax appears on the front cover in tribute for service to his profession, his medical society and to generations of medical students. He was the subject of this column in October 1978, but this article will not be a repetition of that one.

William Lomax was born in North Carolina in 1813. He and his family settled in Wayne County when he was 4 years old. Eventually, he moved to Marion (Grant County), Indiana, as a preceptor-trained physician. He re-

mained there for the rest of his life except for the time required in 1847 and 1848 to get his M.D. degree from the LaPorte Medical College. He was a very early member of the Indiana State Medical Society and served as its president in 1856. He died in 1893.

Dr. Lomax was a contributor to the *Transactions*, writing on a variety of subjects. His most unusual appeared in the 1877 issue and was entitled "Two Cases of Perityphlitis."

You deserve a gold star if you know the meaning of perityphlitis—inflammation of the peritoneum surrounding the cecum and the appendix. The term has long since been replaced by "appendicitis." Lomax gave the clinical description of two cases, both ending in death, and the autopsy findings in one.

Although not an uncommon disease and cause of death, appendicitis was not recognized as such at the time. This was nine years before Dr. Reginald Fitz (1843-1913) of Harvard would publicize the importance of the appendix as a site of disease, and Dr. Rudolph Krönlein of Zurich, Switzerland, would do the world's first appendectomy.

Fitz demonstrated (as did Lomax) that fatal perityphlitis was a peritonitis resulting from rupture of the appendix,

producing "an abscess beneath the cecum, walled in by adhesions." Charles McBurney (1845-1913) has his name associated with the tender spot in the abdomen associated with appendicitis and for the incision used for its surgical correction.

Other writings of Dr. Lomax in the *Transactions* included *Observations and Meteorological Facts in Connection with Diseases* (1851), *Report on Surgery* (1858), *Responsibility of Physicians*, and *Objects and Duties of the Indiana State Medical Society* (1871), *A Case of Ovariectomy and Recovery* (1885), and *Embryotomy Without the Use of Cutting Instruments* (1885). He is credited with having performed the flap amputation below the knee 15 years before the earliest report example.

Dr. Lomax held the chair of surgery for a time in the Fort Wayne Medical College, and he was president of the board of trustees of the Medical College of Indiana. He was also a member of the first Indiana State Board of Health and served as its president for four years.

His magnificent gift of money and property to the Medical College of Indiana resulted in the construction of

CONTINUED ON PAGE 506



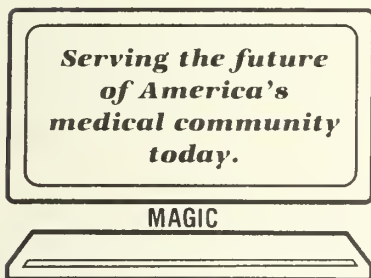
Razing of the Lomax Building in 1961. It was used by the Indiana University School of Medicine from 1908 to 1918. At left is the Indiana State Office Building; at the far right is the State Capitol Building. The photo was taken facing east.



Close-up of the same view looking north. The State Office Building is at left, the Lomax Building at right, and the Indiana State Library Building is in the center.

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WHAT'S NEW?

The National Technical Information Service, a self-supporting agency of the U.S. Department of Commerce, has released *Losing a Million Minds: Confronting the Tragedy of Alzheimer's Disease and Other Dementias*. The book is a comprehensive study of considerable value to medical personnel, clinical investigators, scientists, public policy makers, family care providers and social service workers. The full text is 540 pages at \$44.95. A separate summary is available that consists of 80 pages and costs \$14.95.

Small Business Computer of New England announces a system based on the Apple Macintosh SE or Macintosh II for the complete information management of an anatomic pathology laboratory making tissue and cytology diagnoses. Called the AminoPath™ Laboratory System (APLS™), it sells for under \$15,000. It comes complete with hardware, software, on-site installation and training, and telephone support. APLS maintains complete information files for patients, referring physicians, department staff, staff pathologists, surgical and cytology specimens, and diagnostic text. APLS also provides a complete diagnosis archive for custom reporting functions.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Hewlett-Packard announces a new pulse-oximetry capability for its existing HP 7835X series of patient monitors. This includes a comfortable finger sensor, special algorithm and signal-quality indicator for a high degree of reliability in measuring arterial oxygen saturation.

Shepard's McGraw-Hill announces *Medical Malpractice: Pharmacy Law* by David B. Brushwood, B.S. Pharm, J.D. The book is recommended for pharmacists, drug manufacturers, retail chains and physicians exposed to liability involving prescription, generic and OTC drugs. It is also recommended for attorneys who represent any of the above entities. Thirty-day free trial.

The Acuson Corporation is introducing its Acuson 128 Cardiovascular System, which is said to provide unprecedented ultrasound imaging quality. Its capabilities include true simultaneous, steerable pulsed and continuous wave Doppler and both sector and linear color Doppler formats. The design enables users to easily upgrade their systems as their needs change.

Hewlett-Packard has introduced a new family of disposable, pre-gelled, Ag/AgCl EKG monitoring and stress-testing electrodes designed for high clinical performance and cost efficiency. Users may select the clinical performance level, packaging configuration and price that best meet their specific needs.

Jossey-Bass Inc. Publishers has released *From Denial to Recovery*, a book that tells about alcoholism as it really is. The author is Lawrence Metzger, a psychotherapist. Quote: "Addiction to alcohol in the United States far surpasses addiction to all other drugs combined." Metzger, who has 20 years experience counseling some 3,000 alcoholics and their families, estimates that of the 10 million alcoholics and problem drinkers in this country, only 20% get formal treatment through counseling or with Alcoholics Anonymous. 313 pages — \$22.95.

Hewlett-Packard has introduced its HP SONOS 1000 cardiovascular-imaging system, a phased-array ultrasound system designed for demanding high-performance imaging requirements. Hewlett-Packard says the new ultrasound-system architecture will make possible higher levels of performance and versatility and allow for future upgrades.

Shamrock Industries introduces deep cryogenic treatment to extend the life of expensive surgical instruments. Ultra-cold treatment is said to improve the performance some 200 to 300%, according to industry and university studies. Surgical instruments stay sharp 50 to 200% longer. Instrument resistance to corrosion, abrasion and pitting is increased. Minus 120° Fahrenheit is classified as shallow cryogenics. Deep cryogenic treatment occurs at minus 320°.

The National Electrical Information Corporation (NEIC) announces development of ACU-CLAIM, a new software application for the company's electronic claims processing systems, designed to eliminate the complexity of preparing health care claims for electronic submission. ACU-CLAIM, which is able to accept all health care claims, improves claims submission procedures by providing the ability to prepare errorless, paperless claims for transmission to insurance carriers.



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There could be a 75-year age difference between a 12 year old just beginning to experiment with drugs and an 87 year old worried about the circulation in his feet.

That's why we publish so many different health care pamphlets. There are the "Your Kids & Drugs Spot It/Stop It", and "Living With Aging" series, and other pamphlets on Rabies, Poisons, Insect Stings,

Immunizations, and many more topics. They're all free and your patients can pick them up at the pharmacy counter of any Peoples Drug Store.

For over 80 years, Peoples Drug Stores has served patients reliably and professionally. Today all the services we offer reflect our continuing commitment to help our customers as their health care needs change.

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FUTURE FILE

Temple CME Conferences

Temple University School of Medicine will sponsor a series of continuing medical education conferences at Timberline Four Seasons Resort, Route 32, Davis, W. Va.

Conference topics and dates are: Physician's Nutrition and Disease Prevention Seminar, June 10-12; Diagnosis and Management of the Ischemic Extremity, June 17-19; Common Orthopedic Problems: Recognition and Management, June 24-26; Stroke Prevention and Management, July 8-10; Impotency: Diagnosis and Management, July 15-17; Pulmonary and Thoracic Diseases Seminar, July 22-24; Diabetes Update, July 29-31; Venous Insufficiency of the Lower Extremity, Aug. 5-7; Physician Update on Cancer, AIDS and Liver Disease, Aug. 12-14; Advances In Cardiology, Aug. 19-21; Anesthesia Update, Aug. 26-28; New Antibiotics for Life Threatening Infections, Sept. 9-11; and Interventional Radiology, Sept. 16-18.

The registration fee is \$125.

For information, call (215) 387-3685.

Medical Staff Assembly

The American Medical Association Hospital Medical Staff Section will hold its 11th Assembly Meeting June 23 to 27 at the Marriott Hotel in Chicago.

The meeting will include an educational forum on issues including tort reform, quality assurance and Joint Commission results from its survey on governance and medical staff relationships.

CME credits have been requested.

For information, call (312) 645-4754.

Immune Deficiency

"Immune Deficiency and Vaccines" is the title of a CME course to be held at The Wisconsin Center in Madison, Sept. 22 to 24. Credit is approximately 17 hours of AMA Category 1.

The correspondent is Cathy Means, 2715 Marshall Court, Madison, Wis. 53704—(608) 263-6637.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Methodist Hospital CME

June 12-17, 19-25 and June 25-July 1: Diabetes Mini-Fellowship, Camp John Warvel, Nashville, Ind.

June 23-24: Midwest Regional American Society for Histocompatibility and Immunogenetics, Embassy Suites Hotel, downtown Indianapolis.

Aug. 5-7: Immunological Obstetrics Symposium, Hyatt Regency Hotel, Indianapolis.

Sept. 23-24: Advanced Trauma Life Support Course, Methodist Hospital Auditorium.

Sept. 23-25: 4th Annual Perinatology Symposium, Four Winds, Lake Monroe, Bloomington.

Sept. 29-30: Laser Seminar, Methodist Hospital.

Oct. 21-22: Advanced Cardiac Life Support Course, Methodist Hospital, Wile Hall.

Nov. 2: Annual Lester Bibler Lecture, Methodist Hospital Auditorium.

For more information, contact Dixie Estridge, Coordinator, Continuing Medical Education, Methodist Hospital, 1701 N. Senate Blvd., Indianapolis 46202—(317) 929-3733.

Computers in Medicine

The 12th Annual Symposium on Computer Applications in Medical Care will meet Nov. 6 to 9 at the Sheraton Washington Hotel, Washington, D.C. Articles, demonstrations, or panel proposals are now being called for.

For a copy of the announcement and application form, write to the George Washington University Medical Center, Office of Continuing Education, 2300 K St., N.W., Washington, D.C. 20037.

Breast Disease

The University of Michigan Medical School will sponsor its second annual Symposium on Breast Disease: Diagnostic Imaging and Current Management July 24 to 27 at the Grand Hotel in Mackinac Island, Mich.

Topics will include The Earlier Detection of Breast Cancer, Management Options in Mammography, Current Applications of Breast Ultrasound and Surgical Aspects in the Treatment of Breast Cancer.

For more information, contact Debbie DeSmyther, CME Office, Towsley Center, Box 0201, The University of Michigan Medical School, Ann Arbor, Mich. 48109, (313) 763-1400 or 1-800-962-3555.

Pediatric Emergencies

"Acute Pediatric Emergencies" is the focus of the 16th annual fall Pediatric Surgery/Pediatrics Symposium sponsored by the Indiana University School of Medicine. The event will be held Oct. 12 and 13 at the Lincoln Hotel and University Conference Center in Indianapolis.

Guest speakers include Dr. Marc I. Rowe, Surgeon-in-Chief, Children's Hospital, Pittsburgh, Pa.; Dr. William P. Tunell, Chief, Section of Pediatric Surgery, Oklahoma Children's Memorial Hospital, Oklahoma City; and Dr. Arnold G. Coran, head, Section of Pediatric Surgery, C.S. Mott Children's Hospital, Ann Arbor, Mich.

For information, contact Dr. Jay L. Grosfeld, Symposium Director, Surgeon-in-Chief, Riley Hospital, 702 Barnhill Drive, Indianapolis, 46223—(317) 274-4681, or Registrar, Division of Continuing Medical Education, Indianapolis 46223—(317) 274-8353.

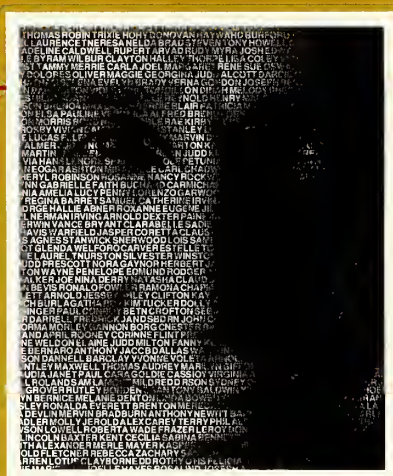
Laser Use

"Laser Use and Safety Issues" is the title of a CME meeting to be held Aug. 25 and 26 at the University of Wisconsin Hospital and Clinics in Madison.

For information, contact Cathy Means, 2715 Marshall Court, Madison, Wis. 53705—(608) 263-6637.

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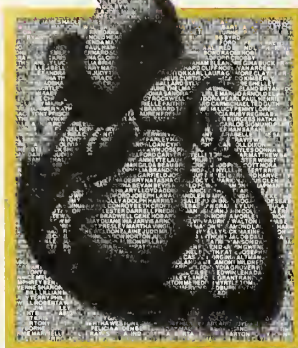
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Please see next page for brief summary of prescribing information.

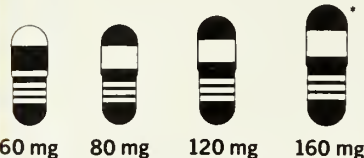
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(PROPRANOLOL HCl)
LONG ACTING
CAPSULES
60, 80, 120, 160 mg

The one you know best
keeps looking better



BRIEF SUMMARY (FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)

INDERAL[®] LA brand of propranolol hydrochloride (Long Acting Capsules)

DESCRIPTION. INDERAL LA is formulated to provide a sustained release of propranolol hydrochloride. INDERAL LA is available as 60 mg, 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. INDERAL is a nonselective, beta-adrenergic receptor-blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor-stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (60, 80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL Tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg-for-mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure, and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

INDICATIONS AND USAGE. **Hypertension:** INDERAL LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock; 2) sinus bradycardia and greater than first-degree block; 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. **CARDIAC FAILURE:** Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned, the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema) — PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, eg, dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOLYCEMIA: Beta blockers should be used with caution in diabetic patients if a beta-blocking agent is required. Beta blockers may mask tachycardia occurring with hypoglycemia, but other manifestations such as dizziness and sweating may not be significantly affected. Following insulin-induced hypoglycemia, propranolol may cause a delay in the recovery of blood glucose to normal levels.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol may change thyroid function tests, increasing T_4 and reverse T_3 , and decreasing T_3 .

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. GENERAL: Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL (propranolol HCl) is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Caution should be exercised when patients receiving a beta blocker are administered a calcium-channel-blocking drug, especially intravenous verapamil, for both agents may depress myocardial contractility or atrioventricular conduction. On rare occasions, the concomitant intravenous use of a beta blocker and verapamil has resulted in serious adverse reactions, especially in patients with severe cardiomyopathy, congestive heart failure, or recent myocardial infarction.

Aluminum hydroxide gel greatly reduces intestinal absorption of propranolol.

Ethanol slows the rate of absorption of propranolol.

Phenyltoin, phenobarbitone, and rifampin accelerate propranolol clearance.

Chlorpromazine, when used concomitantly with propranolol, results in increased plasma levels of both drugs.

Antipyrine and lidocaine have reduced clearance when used concomitantly with propranolol.

Thyroxine may result in a lower than expected T_3 concentration when used concomitantly with propranolol.

Cimetidine decreases the hepatic metabolism of propranolol, delaying elimination and increasing blood levels.

Theophylline clearance is reduced when used concomitantly with propranolol.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY: Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS: INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Light-headedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to cataplexy; visual disturbances; hallucinations; vivid dreams; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics. For immediate formulations, fatigue, lethargy, and vivid dreams appear dose related.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasisiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL Tablets to INDERAL LA Capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg-for-mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary, especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION — Dosage must be individualized. The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS — Dosage must be individualized. Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three- to seven-day intervals until optimal response is obtained. Although individual patients may respond at any dosage level, the average optimal dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE — Dosage must be individualized. The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimal migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximal dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS — 80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE — At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

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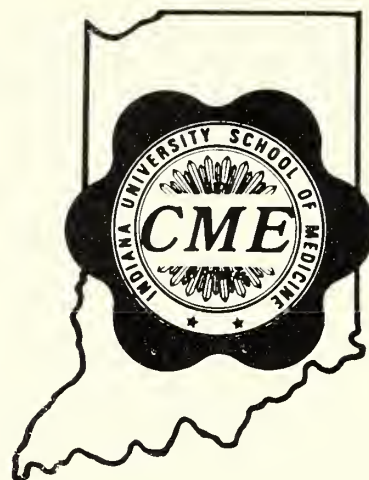
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NEONATAL SEPSIS

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NEONATAL SEPSIS is defined as a generalized bacterial infection accompanied by a positive blood culture during the first month of life.¹ In this article, we will review the incidence, pathogenesis, causative organisms, diagnostic evaluation and management of neonatal sepsis. Deficiencies in neonatal host immune defenses and potential immunotherapeutic techniques to augment current therapy also will be discussed.

Incidence

Neonates are at high risk for acquiring bacterial infections. Approximately one in 1,000 term newborn infants develops septicemia,² and of these, 10-30% die as a result of their infection.³ Pneumonia and septicemia frequently coexist, whereas meningitis occurs in approximately 30% of infants with sepsis.⁴ The incidence of sepsis in premature infants is four times greater than in term infants (four cases per 1,000 births).⁵ Mortality from neonatal

sepsis in premature infants is also greater than that of term infants. In a survey by Vesikari and colleagues, mortality in infants weighing less than 1,500 grams was 67%. Infants weighing 1,500-2,500 grams had a 25% mortality, and those infants weighing more than 2,500 grams had a 10% mortality.³

Pathogenesis

A variety of maternal, environmental and neonatal factors is associated with sepsis in newborn infants. The most significant maternal factors contributing to neonatal infection are the presence of premature and prolonged rupture of membranes, maternal fever and chorioamnionitis. Infants delivered more than 24 hours after membranes have ruptured carry a 1% risk of bacterial infection; if both prolonged rupture of membranes and chorioamnionitis are present, the risk of infection is 10%.⁶ Maternal urinary tract infection, bacteremia, vaginal bleeding,

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Acknowledgments: James A. Lemons, M.D., for review of the manuscript, and Carol Blue for typescript preparation.

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colonization with specific pathogens (e.g., group B streptococcus), and a prolonged second stage of labor are other maternal factors that increase the risk for infection in the neonate.

Environmental factors of importance in the pathogenesis of neonatal infection relate to breakdown of the skin and mucosal barriers that normally retard bacterial invasion. The functionally and anatomically immature skin of the neonate, especially that of the premature infant, increases the susceptibility of the newborn infant to serious infection.⁷ Congenital defects, fetal scalp electrodes, and techniques used to provide life-support (intubation, cannulation of central blood vessels, mechanical ventilation) may further contribute to altered barrier defenses. Furthermore, bacteria may be ingested or aspirated during the birth process. If the inoculum of bacteria is large and/or the mucosal barriers within the lung or gastrointestinal tract are deficient due to disease (respiratory distress syndrome, bowel obstruction) or immaturity, bacteria may invade the tissues and, subsequently, the bloodstream.

Neonatal factors associated with sepsis include prematurity, hyaline membrane disease, urogenital abnormalities, congenital heart disease, parenteral alimentation, surgical procedures, asphyxia and host defense deficiencies. Impairments in neonatal host defenses have been reviewed recently by several authors.⁸⁻¹⁰

Once bacteria penetrate the skin and mucosal barriers, both humoral and cellular defenses are normally activated. However, both components appear to be incompletely developed in the newborn infant. Humoral immunity in neonates is deficient due to a limited capacity to produce antibodies,¹¹ dependence on transplacental passage of specific immunoglobulin G antibodies (which occurs in significant quantity only after 32 weeks of gestation), reduced activity and concentration of complement components,¹² and low concentrations of the opsonic

glycoprotein fibronectin.¹³ As a result, the neonate has a limited ability to opsonize bacteria and signal inflammatory cells to move toward areas of inflammation.

Cellular immunity also is limited in neonates. Polymorphonuclear leukocytes (PMN) are responsible for the initial phagocytic defense once bacteria have reached the bloodstream and are

TABLE 1
Bacterial Organisms Responsible for Neonatal Sepsis

Common Organisms

Group B Streptococcus

Escherichia coli

Group D Streptococcus

(enterococcus and nonenterococcus)

Unusual Organisms

Staphylococcus aureus

Streptococcus epidermidis

Hemophilus influenzae

Klebsiella pneumoniae

Enterobacter species

Streptococcus pneumoniae

Listeria monocytogenes

Rare Organisms

Anaerobic species (*Bacteroides*, *clostridia*)

Group A Streptococcus

Pseudomonas aeruginosa

Proteus species

Pneumococcus

the first phagocytes to be attracted to sites of inflammation. The bone marrow reserves of PMN are reduced in neonates,¹⁴ and neonatal PMN do not migrate to inflammatory sites as well as adult PMN.¹⁵ In addition, neonatal PMN have deficiencies in phagocytic and bactericidal capacities, especially when the neonate is clinically stressed.¹⁶ Lung macrophages also are fewer in number in the neonate¹⁷ so that local phagocyte defenses are reduced in the neonatal lung. Therefore, once bacteria

have penetrated skin and mucosal defenses, neonates have a reduced capacity to localize and destroy the bacteria, i.e., they are immunocompromised.

Etiology

A variety of infectious agents (*Table 1*) causes neonatal sepsis.¹⁸ Group B beta-hemolytic streptococcus (GBBS) and *Escherichia coli* account for nearly 70% of cases of early-onset (<5 days) neonatal sepsis. Currently, GBBS is the most common cause of neonatal sepsis in the United States. Group D streptococci, *Listeria monocytogenes*, *Hemophilus influenzae*, and other enteric organisms are less frequent pathogenic agents. Although rare, anaerobic organisms, Group A Streptococcus, *Pseudomonas aeruginosa*, and *Proteus* species also cause neonatal sepsis. Late-onset sepsis may involve these same organisms or may involve community acquired agents such as meningococci or pneumococci. Nosocomially acquired agents include *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Pseudomonas aeruginosa*, *Candida albicans*, *Klebsiella species*, and *Serratia marcescens*. These organisms are predominantly found in infants requiring prolonged intensive care (e.g., very low birth weight infants, infants with major congenital anomalies).

Clinical Considerations

The clinical presentation of neonatal infection is frequently nonspecific (*Table 2*). Often a parent or nurse will state that the neonate is "not doing well" although they cannot specify a distinct reason. At other times, the infant presents with respiratory distress, shock, seizures, irritability, lethargy, apnea, glucose intolerance, jaundice or temperature instability.

Characteristic presentations for early-onset and late-onset infection with both group B streptococcus and *Listeria monocytogenes* have been described. The early-onset illness typically is characterized as a fulmi-

TABLE 2
Clinical Findings in Neonatal Infections

"Not doing well"
Lethargy, irritability, seizures, bulging fontanelle, hyper/hypotonia, apathy
Respiratory distress, cyanosis, apnea
Poor feeding, abdominal distension, vomiting, abdominal erythema, diarrhea
Purpura, petechiae, sclerema, omphalitis, cellulitis
Jaundice, thrombocytopenia, bleeding
Hypotension, pallor, tachycardia, shock
Temperature instability
Hypo/hyperglycemia
Osteomyelitis, septic arthritis

nant, multisystem illness. Ascending or transplacental infection may be frequent routes for infection in these infants. Late-onset infection with these organisms generally is due to colonizing bacteria acquired during passage through the mother's genital tract or to acquisition of environmental pathogens postnatally, and is associated with more focal symptoms.

Meningitis frequently (although not exclusively) presents as a late-onset infection with signs similar to those of sepsis. Increasing irritability, altered consciousness and convulsions may accompany meningeal inflammation. The classic triad of fever, bulging fontanelle and nuchal rigidity are late and ominous signs of meningitis in neonates.

Since the signs of sepsis and meningitis are nonspecific, laboratory evaluation may help support or exclude the diagnosis. However, whenever an infant presents with the above signs and no immediate explanation for the findings can be established, sepsis and/or meningitis should be considered, appropriate cultures obtained and antimicrobial therapy initiated.

Laboratory Evaluation

Confirmation of the clinical impression of sepsis and meningitis should be attempted by (Table 3) appropriate culturing of the organism from blood, urine, cerebrospinal fluid (CSF) or other normally sterile body fluids (joint, pleural, peritoneal, middle ear). Bacterial growth usually is evident within 48-72 hours of culture.¹⁹ It generally is recommended that cultures be obtained prior to administration of antibiotics, although occasionally this is not technically possible. If an infant has received antibiotics prior to cultures, then appropriate cultures should still be obtained, but processed by both traditional culturing methods as well as resin-based methods. The resin holds antimicrobials out of solution, allowing the growth of bacterial organisms.²⁰ Surface cultures from the ear canal, umbilicus, groin, axilla, nasopharynx, rectum, stomach and trachea occasionally are performed. The usefulness of

this practice has been questioned, and recently Evans and co-workers have demonstrated that the use of body surface cultures to diagnose infection in the newborn infant is of little merit.²¹

There are several additional laboratory tests that may increase the suspicion of infection in the neonate. These tests should be used as supportive information and not to confirm a diagnosis of sepsis because normal values for many of these tests may be present in the face of sepsis. One diagnostic aid is the use of either latex particle agglutination or counterimmunoelectrophoresis techniques to detect bacterial antigens in body fluids. The antigens for group B streptococcus, *Escherichia coli*, *Hemophilus influenza*, *Neisseria meningitidis*, and *Streptococcus pneumoniae* can be detected with these methods. The presence of clinical symptomatology and a positive antigen study provide strong presumptive evidence of infection.

TABLE 3
Laboratory Evaluation for Neonatal Sepsis

Culture: Blood, cerebrospinal fluid, urine or other normally sterile fluid (joint, pleural, peritoneal, middle ear)
Diagnostic aids:
Antigen analysis
Latex particle agglutination: Group B streptococcus, *E. coli*, *H. influenzae*
Counterimmunoelectrophoresis: Group B streptococcus, *E. coli*, *H. influenzae*, *N. meningitidis*, *S. pneumoniae*
WBC indices
Total neutrophil count
Immature neutrophil count
Immature to total neutrophil ratio
Platelet count
Chest radiograph
Gram stains
Blood
Buffy coat
Cerebrospinal fluid or other normally sterile body fluid
Urine analysis
Cerebrospinal fluid
Protein
Glucose
White blood cell count and differential count

Other laboratory tests that we find helpful in our diagnostic work-up for neonatal sepsis include white blood cell indices (total neutrophil count, immature neutrophil count, and immature-to-total neutrophil ratio),²² platelet count, chest radiograph, and gram stains of blood, buffy coat, cerebrospinal fluid or other normally sterile body fluid. Total protein, glucose, white blood cell count and differential in the cerebrospinal fluid are also recommended laboratory studies in the absence of contraindications for lumbar puncture (unstable cardiopulmonary status, severe thrombocytopenia or other coagulopathy). If a urinalysis is suggestive of infection, either suprapubic aspiration or catheterization of the bladder is performed to obtain an appropriate urine sample for culture.²²

A number of other tests have been recommended by a variety of authors to increase the suspicion of infection in a neonate. Some of these tests include C-reactive protein, haptoglobin, erythrocyte sedimentation rate, fibronectin, orosomucoid, alpha₁-antitrypsin, leukocyte alkaline phosphatase and fibrinogen. The presence of toxic granulation, vacuolation and Döhle bodies in neutrophils on a smear of whole blood also have been used to increase the suspicion of infection in neonatal infants.

Treatment

The decision to initiate treatment of an infant with suspected sepsis should be based on physical exam, history, and laboratory test results (Table 4). Immediate attention should be directed at correcting any cardiovascular or respiratory insufficiency in severely symptomatic infants. An integral part of stabilizing these infants is antibiotic administration.

Antibiotic selection should be based on suspicion of the invading organism. During the first month of life we recommend that all infants with suspected sepsis receive penicillin (or penicillin derivative) and an aminoglycoside. Am-

picillin and gentamicin are commonly used in this situation and are effective against group B streptococcus, *L. monocytogenes*, and most gram-negative enteric pathogens. After culture results and susceptibility studies are completed, antibiotic selection should be modified to provide the safest and most effective drug.

TABLE 4
Treatment of Neonatal Sepsis

Antibiotics
Supportive care
Immunotherapy
Fresh frozen plasma
Red blood cells
Platelets
? Exchange transfusion (fresh whole blood)
? Granulocyte transfusion
? Immunoglobulin infusion
? Maternal chemoprophylaxis
??? Fibronectin transfusion
??? Maternal vaccine administration
??? Maternal immunoglobulin transfusion

In hospitalized infants with suspected nosocomial infections, choice of antibiotic should reflect the known sensitivities of pathogens colonizing infants in the nursery. Currently, our broad spectrum antibiotic regimen for nosocomial infection includes an anti-staphylococcal antibiotic (generally nafcillin or methicillin) and an aminoglycoside (generally gentamicin). If the infant is deteriorating clinically, vancomycin, piperacillin and/or clindamycin may be indicated depending on the suspected origin of the infection (e.g., intestinal, pulmonary, etc.) and sensitivities of nosocomial organisms in the nursery.

The treatment regimen for meningitis in infants less than one month of age is usually the same as for suspected sepsis. Ampicillin is effective against group B streptococcus and *L. monocytogenes*. Aminoglycoside antibiotics and

ampicillin in combination are effective in patients with gram-negative meningitis, although rapid sterilization of CSF often is difficult. The identification of *H. influenzae* in patients with meningitis in the neonatal period further complicates drug selection. Chloramphenicol may be added to ampicillin and gentamicin; however, a new cephalosporin, cefotaxime, is effective against *H. influenzae* and many other gram-negative organisms.

At James Whitcomb Riley Hospital for Children, newborn infants are currently started on ampicillin and gentamicin for suspected meningitis. If a gram stain of the CSF demonstrates gram-negative rods or if the infant is at high risk for gram-negative infection (urogenital abnormality, maternal infection with gram-negative organism), cefotaxime is added to ampicillin as initial therapy until the causative organism is identified.²³ In our newborn intensive care population, gram-negative enteric organisms may be resistant to aminoglycoside antibiotics but sensitive to cefotaxime or piperacillin.

Treatment for neonatal meningitis usually requires higher dosages of antibiotics and longer duration of therapy than treatment for sepsis. Infants with uncomplicated sepsis are treated for 10 to 14 days. Meningitis caused by gram-negative bacteria should be treated for 21 days. Infants with meningitis caused by *L. monocytogenes* or group B streptococcus should receive antibiotic therapy for 14 days after spinal fluid sterilization. Care should be taken to monitor serum antibiotic levels with certain antimicrobials (e.g., aminoglycosides) to provide optimum efficacy with the least untoward effects. In addition, repeat culture of blood and CSF is recommended every 24 to 48 hours until sterile cultures are obtained.

Immunotherapy

Recognizing the compromised immune status of the neonate, several immunotherapeutic interventions are currently being investigated in this high risk population. It has been proposed

that selected immunotherapies may enhance our ability to treat and possibly even prevent infectious diseases in the newborn. The immunotherapies being evaluated include exchange transfusion, leukocyte transfusion, immunoglobulin transfusion, fibronectin transfusion, chemoprophylaxis of pregnant women with specific risk factors, and the administration of group B streptococcal vaccine to prospective mothers.

General hemotherapeutic supports are utilized frequently in neonates with overwhelming sepsis. Red blood cell, platelet, and plasma transfusions contribute to the hemodynamic support of critically ill neonates. It has been customary to maintain a critically ill neonate's hematocrit at greater than 40%, although the efficacy of this practice has not been firmly established. Sick infants with platelet counts less than 20-50,000 per cubic mm are generally given platelet transfusions to minimize the risk of serious bleeding. In infants who are extremely ill and at risk for hemorrhage, it may be desirable to maintain a platelet count greater than 50,000 per cubic mm.²⁴ When neonatal sepsis is complicated by disseminated intravascular coagulation, platelets and/or fresh frozen plasma may be added to the treatment regimen. Heparin is rarely indicated in these infants.

Fresh whole blood exchange transfusion has been advocated by some investigators for the treatment of neonatal sepsis.^{25,26} The rationale for the use of this therapy is to remove bacterial endotoxins, fibrin degradation products and other "undesirable by-products of bacterial sepsis" while providing serum opsonins, immunoglobulin and complement components. Several authors have reported both improvements in peripheral leukocyte counts as well as in clinical condition following exchange transfusion with fresh whole blood.²⁷⁻²⁹ Despite the beneficial responses noted by some authors, this procedure has not been widely used for neonatal sepsis. The

reasons for this include lack of a randomized prospective trial to demonstrate efficacy of exchange transfusion, as well as the significant incidence of complications during and following exchange transfusion. At present, therefore, the role of exchange transfusion for infants with neonatal sepsis awaits further evidence of its efficacy and safety.

Granulocyte transfusion in newborn infants was introduced to the neonatal patient in 1978 by Laurenti and co-workers.³⁰ Subsequently, Christensen and colleagues,³¹ and Cairo and co-workers³² have reported benefit in survival of septic neonates who have received granulocyte transfusions. Baley and co-workers, however, failed to show benefit in survival with leukocyte transfusions.³³ Unresolved questions remain concerning efficacy, potential complications, indications, and type of granulocyte preparation most appropriate for leukocyte transfusion. As a result, we do not recommend the use of leukocyte transfusions in neonates with sepsis at this time.

The potential treatment of neonates with sepsis or known immunoglobulin deficiency (i.e., premature infants) with immunoglobulin may become a reasonable consideration with the development of safe intravenous preparations of purified immunoglobulins. Several studies currently are being performed in the United States to determine whether immunoglobulin infusion will improve the survival of septic infants as well as prevent infections in low birth weight infants. These trials are not yet complete, but were stimulated by recent reports that suggest immunoglobulin infusion may be beneficial in these instances.^{34,36}

Sidiropoulos found that newborn infants suspected of having a bacterial infection had a 90% survival rate if they received intravenous immunoglobulin and antibiotics; a similar group who received antibiotics alone had a 74% survival.³⁴ A 92% survival was found in preterm infants with antibiotic plus intravenous immunoglobulin

treatment versus a 56% survival in preterm infants receiving antibiotic therapy alone. Both Haque³⁵ and Chirico³⁶ demonstrated that intravenous immunoglobulin given prophylactically to infants weighing less than 1,500 grams appeared to decrease infectious mortality during their hospitalization. Only a small number of patients have been included in these studies. We must await further trials incorporating much larger, well-defined study populations to define the role of immunoglobulin infusion in the treatment of neonatal sepsis.

Several other immunotherapies currently undergoing study include the use of fibronectin infusion, maternal immunoglobulin transfusion to improve passive transfer of immunoglobulin to offspring, and group B streptococcal vaccines.^{34,37,38} In addition, maternal antibiotic chemoprophylaxis to prevent infection in newborn infants has been reported.³⁹ Boyer performed a randomized controlled trial of intrapartum ampicillin prophylaxis for women colonized with group B streptococcus who were also in premature labor, had prolonged rupture of membranes, or were febrile during labor. Infants of women receiving ampicillin chemoprophylaxis had a significantly lower incidence of group B streptococcal colonization as well as group B streptococcal sepsis compared to infants of untreated control mothers. It appears that the use of intrapartum ampicillin for a high risk population of group B streptococcal colonized pregnant women at risk of premature delivery may successfully reduce the incidence of neonatal infection due to group B streptococcus.

Summary

Overwhelming bacterial infection remains a major cause of mortality in the neonatal period. Further, mortality from neonatal sepsis is not diminishing despite new antibiotic therapy and advanced life support technology. Deficient immune defenses place the neonate, particularly the premature infant, at increased risk for invasive bacterial

disease. As hematologic abnormalities often accompany severe sepsis, replacement transfusion with packed RBC, platelet concentrate, and fresh frozen plasma may be employed to achieve hemostasis.

The rationale for the use of exchange transfusion, granulocyte transfusion, intravenous immunoglobulin, and fibronectin transfusion as immunotherapeutic agents is to augment host defense deficiencies. However, data to support the use of these treatments are often contradictory or inconclusive, and further studies are needed before the potential role of these regimens can be more accurately defined.

Chemoprophylaxis with ampicillin during the intrapartum period in certain high risk, well-defined pregnant populations appears to reduce the risk for neonatal GBBS infection. Administration of Group B streptococcal vaccine and maternal IgG transfusions have potential, but as yet unproven, benefits.

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Systemic absorption of topical corticosteroids has produced reversible HPA suppression manifestations of Cushing's syndrome, hyperglycemia and glucosuria in some patients. Pediatric patients may demonstrate a greater susceptibility.

Reference: 1. Adams RM, Maltack HL, Clendenning WE, et al: A five year study of cosmetic reactions. *J Am Acad Dermatol* 1983;13(6):1062-1069.



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Information for the Patient: Patients using this medicine should receive the following information and instructions:

1. This medication is to be used as directed by the physician. It is for external use only. Avoid contact with the eyes.
2. Patients should be advised not to use this medication for any disorder other than for which it was prescribed.
3. The treated skin area should not be bandaged or otherwise covered or wrapped so as to be occluded (see **DOSAGE AND ADMINISTRATION**).
4. Patients should report any signs of local adverse reactions.
5. When using this medication in the inguinal area, patients should be advised to apply cream sparingly and to wear loose fitting clothing.
6. Parents of pediatric patients should be advised not to use tight-fitting diapers or plastic pants on a child being treated in the diaper area, as these garments may constitute occlusive dressings.
7. Patients should be advised on preventive measures to avoid reinfection.

Laboratory Tests: If there is a lack of therapeutic response, appropriate microbiological studies (e.g., KOH smears and/or cultures) should be repeated to confirm the diagnosis and rule out other pathogens, before instituting another course of therapy. The following tests may be helpful in evaluating hypothalamic-pituitary-adrenal (HPA) axis suppression due to the corticosteroid: Urinary free cortisol test, ACTH stimulation test.

Carcinogenesis, Mutagenesis, and Impairment of Fertility: Long-term animal studies have not been performed to evaluate the carcinogenic or mutagenic potential or possible impairment of fertility in males or females.

Pregnancy Category C: There are no teratogenic studies with combined nystatin and triamcinolone acetronide. Corticosteroids are generally teratogenic in laboratory animals when administered systemically at relatively low dosage levels. The more potent corticosteroids have been shown to be teratogenic after dermal application in laboratory animals. Therefore, any topical corticosteroid preparation should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Topical preparations containing corticosteroids should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time.

Nursing Mothers: It is not known whether any component of this preparation is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised during use of this preparation by a nursing woman.

Pediatric Use: In clinical studies of a limited number of pediatric patients ranging in age from 2 months through twelve years, Nystatin-Triamcinolone Acetronide Cream cleared or significantly ameliorated the disease state in most patients. Pediatric patients may demonstrate greater susceptibility to topical corticosteroid-induced hypothalamic-pituitary-adrenal (HPA) axis suppression and Cushing's syndrome than mature patients because of a larger skin surface area to body weight ratio. HPA axis suppression, Cushing's syndrome, and intracranial hypertension have been reported in children receiving topical corticosteroids. Manifestations of adrenal suppression in children include linear growth retardation, delayed weight gain, low plasma cortisol levels, and absence of response to ACTH stimulation. Manifestations of intracranial hypertension include bulging fontanelles, headaches and bilateral papilledema. Administration of topical corticosteroids to children should be limited to the least amount compatible with an effective therapeutic regimen. Chronic corticosteroid therapy may interfere with the growth and development of children.

ADVERSE REACTIONS: A single case (approximately one percent of patients studied) of acneiform eruption occurred with the use of combined nystatin and triamcinolone acetronide in clinical studies.

Nystatin is virtually nontoxic and nonsensitizing and is well tolerated by all age groups, even during prolonged use. Rarely, irritation may occur.

The following local adverse reactions are reported infrequently with topical corticosteroids. These reactions are listed in an approximate decreasing order of occurrence: burning, itching, irritation, dryness, folliculitis, hypertrichosis, acneiform eruptions, hypopigmentation, perioral dermatitis, allergic contact dermatitis, maceration of the skin, secondary infection, skin atrophy, striae and milium.

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R 4/87

MUSEUM NOTES ...

CONTINUED FROM PAGE 490

the first building in Indiana specifically designed to be a medical school. It served the Medical College of Indiana from 1895 to 1906, Purdue University Department of Medicine from 1906 to 1908, and Indiana University School of Medicine from 1908 to 1918. After that it was used by the Indiana State Board of Health and by the Indiana State Highway Commission until it was razed in 1961, by which time it had long since been designated as the State House Annex. Grass now grows where the building once stood.

Many years ago a bronze marker was located on the wall by the main entrance to Emerson Hall across from the dean's office. The marker was dedicated to the memory of Dr. William Lomax.

"Who was Dr. Lomax?" asked a young faculty member, now in his eighties. The dean, still remembered for his pithy comments, replied, "I don't know. He's a dead doctor and one thing is certain; there's nothing deader than a dead doctor!"

RADIOLOGY CLINIC

An Asymptomatic Vertebral Lesion in a 60-Year-Old Woman

SECTION EDITOR:

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Clinical History

An asymptomatic 60-year-old postmenopausal woman had lumbar spine radiographs for routine screening of osteoporosis.

**Patient's
Radiographs
on Admission:
What Is
The Patient's
Problem?**



(Diagnosis and Discussion on Next Page)

From the Dept. of Radiology, Indiana University Medical Center, Indianapolis, Ind. 46223.

RADIOLOGY CLINIC

Discussion

On a routine lateral view of the lumbar spine, vertical coarsening of the trabecular pattern of the L2 vertebral body was seen. There was no associated cortical thickening or increase in size of the vertebra. No other abnormalities were noted.

The findings represent spinal hemangioma, a common primary benign neoplasm usually discovered incidentally. The reported incidence at autopsy is over 10%. Hemangiomas are usually single lesions most often involving the lumbar spine. They may occur in either sex and at any age, but are rare in the first decade.

The radiographic hallmark is prominence of the secondary trabeculae of a vertebral body, giving a coarse vertical striped "corduroy cloth" or "honeycomb" appearance. Most cases involve the vertebral body only, but the spinal hemangioma may extend into the neural arch, pedicle, transverse process or spinous process. The main radiographic differential diagnosis is Paget's disease, which typically causes vertebral enlargement and cortical thickening in addition to the striated appearance. Occasionally, plasmacytoma may also mimic hemangioma.

Although usually asymptomatic, spinal hemangiomas may present with localized or radicular pain, weakness, sensory or motor deficit, or paralysis

of one or more extremities. Often when present, the symptoms are of insidious onset. There may be months to years of preceding back or nerve-root pain, but frequently pain is absent. As a result, patients are often seen at a late stage when a symptomatic hemangioma is present.¹

Compression of the spinal cord or nerve-roots occurs in one of four ways, in order of decreasing frequency:

1. Subperiosteal growth resulting in an epidural extension of the vertebral hemangioma.²

2. Hypertrophy of the involved vertebra with narrowing of the vertebral canal secondary to thickening of the pedicles and laminae.

3. Compression fracture of the involved vertebra.

4. Epidural hemorrhage.

Those lesions causing cord compression are more often located in the thoracic region, commonly T5 through T9, compared with the usual lumbar location of the asymptomatic spinal hemangiomas. They also commonly involve the entire vertebral body and extend into the neural arch and pedicles. The striated appearance is often more irregular than the typical regular trabeculation seen in most asymptomatic lesions. The cortex may be expanded and poorly defined, and soft tissue paraspinal swelling is a more common feature of compressive spinal hemangiomas. In patients with a

known vertebral hemangioma and back pain of unknown origin, three or more of these radiographic features may indicate a potentially symptomatic lesion.

Symptomatic spinal hemangiomas may be further investigated by myelography, computed tomography, angiography and magnetic resonance imaging.³ Computed tomography performed with intrathecal contrast currently seems to offer the most precise diagnostic information and guide to surgical approach, but magnetic resonance imaging may supplant it in the future. Selective spinal angiography offers the opportunity for preoperative embolization of the arterial feeders. This has been shown to significantly reduce the operative morbidity and mortality as hemorrhage during surgery may otherwise be profuse.

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Rheumatic Heart Disease

Will We See More Cases With the Fever on the Rise?

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RANDALL L. CALDWELL, M.D.²
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Abstract

The incidence of rheumatic heart disease had been decreasing over the last three decades and was an uncommon disease to initially diagnose in the early 1980s. The common practice of early antibiotic use as a treatment for upper respiratory tract infections and pharyngitis in many offices, clinics and

emergency rooms may have accounted for the decreased incidence. Recently, there has been an increased number of patients with acute rheumatic fever seen at the Indiana University Medical Center campus in Indianapolis. Reasons for this increase are unclear. A case report and a brief review of the diagnosis and treatment are presented.

A 6-YEAR-OLD BOY was hospitalized for evaluation of dyspnea. He had been well until two weeks earlier when he experienced right knee pain. One week before admission he had symptoms of an upper respiratory infection, with a nonproductive cough, sore throat, stomachache and a decreased appetite. He experienced diarrhea for two to three days. There was a questionable history of fever, and the patient had been treated with Tylenol for one week. He had had trouble breathing for the past 10 days when lying flat on his back. This improved with lying on his side. His mother noticed that he would lean forward to catch his breath. He had decreased endurance and also complained of "heart pains."

No previous history of heart disease could be elicited. He had had pneumonia in September 1985. His growth and development were normal. He was born by cesarean section with a birth weight of 8 pounds, 6 ounces. Immunizations were current.

At the time of admission the vital signs were: temperature 97.8, pulse 136, respiration 32, blood pressure 110/64. He weighed 49 pounds. The patient was alert, cooperative and in no acute distress. There was no cyanosis or edema.

Tonsils were without exudate. Lungs were clear. S₁ was normal, S₂ was obscured by a grade III/VI harsh holosystolic murmur heard maximally at the apex and radiated to the left axilla. A grade II/VI diastolic murmur was noted at the apex. An S₃ and S₄ gallop were present. The PMI was below the nipple in the fifth intercostal space. The liver was palpated 2 cm below the right costal margin. The joint, skin and neurologic exam were all unremarkable.

The child was admitted with the diagnosis of acute rheumatic fever. Fluid restriction along with supplemental oxygen, Lasix and digoxin were instituted. Strict bed rest was begun.

Aspirin and phenoxymethyl penicillin were started. The complete blood count revealed a white blood cell count of 11.0, Hb of 10 with 72 segs, 26 lymphs, and 2 eosinophils. The initial sed rate was 78. The electrolyte profile was within normal limits. The ASO titer was 625 on July 7, 1986, and the pharyngeal culture was positive for *S pyogenes* (Group A β -hemolytic strep).

The EKG demonstrated left atrial enlargement and left ventricular hypertrophy with an axis of +60. The echocardiogram showed a dilated left atrium and left ventricle with abnormal mitral valve motion and prolapse of the anterior leaflet of the mitral valve. There was evidence of mitral but not aortic insufficiency. The chest x-ray demonstrated increased heart size with interstitial edema consistent with congestive heart failure (*Figure 1*).

The echocardiogram on July 26, 1986, showed mitral insufficiency and LA and LV dilatation consistent with volume overload. The left ventricular ejection fraction by nuclear scan was 50%. As the patient improved clinically, the sedimentation rate continued to decline and was 16 on Aug. 4. The patient was discharged on digoxin, Slow-K, Lasix and limited activity.

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FIGURE 1A



FIGURE 1B



FIGURE 1C

FIGURE 1A: The chest x-ray of Sept. 12, 1985, that shows an AP chest before the streptococcal infection demonstrates a right middle lobe pneumonia. Note the normal heart size.

FIGURE 1B: Two days after admission, July 8, 1986, a PA chest shows cardiomegaly with interstitial and pleural fluid consistent with acute congestive heart failure.

FIGURE 1C: One month after discharge, Sept. 11, 1987, a PA film shows cardiomegaly without failure.

A follow-up clinic visit on Sept. 29, 1986, showed the sed rate to be 5, with the digoxin and salicylate levels to be therapeutic. The EKG showed bilateral atrial enlargement and left ventricular hypertrophy. The chest x-ray was un-

changed with marked cardiomegaly and increased pulmonary vascularity. His EKG and chest x-ray remained stable over the next three months with the echocardiogram showing evidence of severe mitral insufficiency.

Discussion

Rheumatic heart disease is thought to be caused by a hypersensitivity to *β-hemolytic group A streptococci*. Ninety percent of the cases are in the 5 to 15 age range. The peak occurrence

is in the late winter and early spring when respiratory infections are the most common. There is no gender or racial preference.

Rheumatic carditis occurs in one-third of all cases. All three layers of the heart are involved in pancarditis. Isolated mitral valve involvement occurs in 50% of the cases. Mitral and aortic involvement is the next most common. Three valve involvement is rare. Pulmonary valve involvement is the most rare.

The heart valves may become involved with verrucae that are friable fibrin vegetations found along the lines of closure of the valve. These occur on the side of forward blood flow. Mitral valve stenosis may be a late finding. This causes the classic "fishmouth" or "button hole" appearance to the mitral valve. Inflammatory lesions in the heart produce the classic "Aschoff bodies" that are fibrinoid material surrounded by inflammatory tissue. McCallum plaques are thickening of mural endocardium.

The diagnosis is based on a constellation of findings. T. Duckett Jones published his criteria in 1944.¹ The Jones Criteria have since been modified by the American Heart Association.^{2,3} The natural history of the disease along with prevention and treatment has been well studied.^{4,5} The revised criteria are listed in the Table.

Acute rheumatic fever (ARF) is considered to be present when two major manifestations are present. Major manifestations include carditis, arthritis, subcutaneous nodules, erythema marginatum and chorea. Acute rheumatic fever also may be indicated by the presence of one major and two minor criteria. The minor criteria include fever ($>39^{\circ}\text{C}$ or 102.2°F), arthralgia (in the absence of arthritis), prolonged P-R interval, elevated sedimentation rate, C-reactive protein elevation, leukocytosis and history of previous rheumatic fever.

Carditis may be diagnosed by any one of the following:

TABLE Jones Criteria	
MAJOR	
Polyarthritis	75%
Carditis	40-50%
Chorea	15%
Erythema marginatum)	
Subcutaneous nodules).....	10%
*Percent of signs seen on first presentation.	
MINOR	
Clinical: Previous Rheumatic Fever or Rheumatic Heart Disease	
Arthralgia	
Fever	
Lab: Leukocytosis	
Elevated Sed Rate	
Positive C reactive protein	
Acute Phase Reactants	
EKG: Prolonged P-R interval	
Jones Criteria (Revised) for Guidance in the Diagnosis of Rheumatic Fever. In addition to the presence of two major, or one major and one minor criteria, there must also be supporting evidence of a preceding streptococcal infection. This includes increased ASO, positive throat culture for group A <i>Streptococcus</i> or recent scarlet fever.	

1. Onset of a new apical systolic murmur, apical mid-diastolic murmur or aortic diastolic murmur.

2. Cardiomegaly.

3. Pericarditis.

4. Congestive heart failure.

Polyarthritis is the most frequent major manifestation. It is migratory and most frequently involves the larger joints. Polyarthritis is manifested by swelling, heat, redness, tenderness, pain and limitation of motion in at least two joints.

Sydenham's chorea (St. Vitus' dance) is not an uncommon finding. Purposeless, involuntary, rapid movements involve the hands in a rhythmic contraction called "Milk Maids Grip." Chorea is most common in the young and is rare in adults. There is frequently associated muscle weakness and behavioral abnormalities.

Erythema marginatum is a skin eruption most prominent on the trunk and abdomen, but may occur on the face and extremities. Reddish maculae

or papules may enlarge over several minutes and form crescentic, scalloped or serpentine patterns. Showers of lesions may come and go in 20-30 minutes. The eruption is non-puritic and non-indurated, and blanches on pressure.

Subcutaneous nodules are gray, translucent and round elevations measuring 2-20 mm in diameter. They are nontender and freely moveable. They are found over the extensor surfaces of the elbows, knees and wrists. Nodules are rare but are most often associated with the presence of carditis.

The treatment of acute rheumatic fever involves strict bed rest and usually involves hospitalization in cases of carditis. Bed rest should continue until the sedimentation rate has normalized. Antibiotic therapy is instituted after the appropriate cultures have been obtained. Oral penicillin for 10 days or IM penicillin benzathine G 1.2 million units is recommended. Erythromycin is

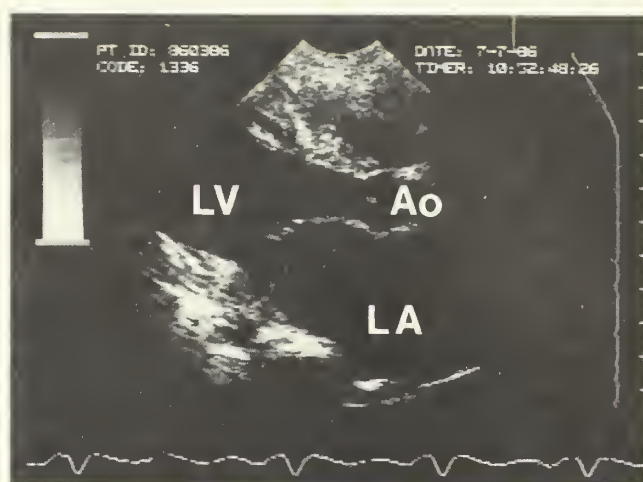
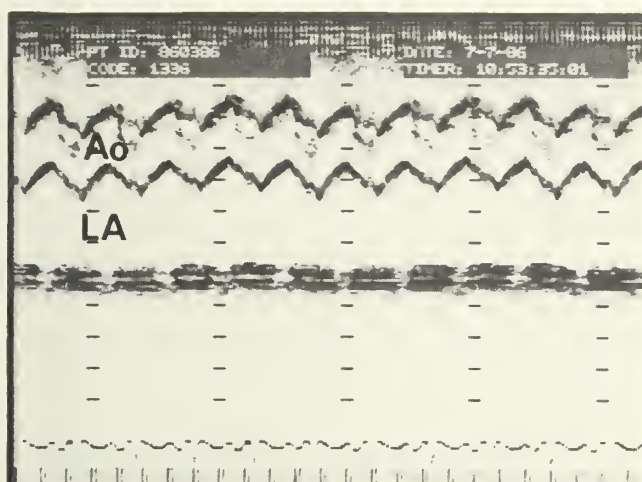


FIGURE 2: M mode echocardiogram (left) and 2-D echocardiogram (right) on the day after admission demonstrate the dilated left atrium and left ventricle. (LA=Left Atrium, AO=Aorta, LV=Left Ventricle.)

recommended for those allergic to penicillin. Aspirin is the drug of choice for treatment of arthritis, arthralgia or mild carditis. It is titrated to therapeutic levels 20-25 mg/100ml.

Steroids are reserved for those cases with severe carditis. Prednisone 60mg/m²/day may be given in addition to salicylates for severe carditis. We prefer to use high dose prednisone for the first week and then attempt to rapidly wean over the second week. If there is rebound increased carditis, longer treatment is necessary. If congestive heart failure is present, sodium restriction, digoxin and diuretics are prescribed.

Many studies have suggested that approximately 50% of patients having had acute rheumatic fever will have a recurrence if they have a hemolytic streptococcal infection. Daily administration of oral penicillin or monthly injection of benzathine penicillin has been shown to be effective in prevention of recurrent streptococcal infections and thus rheumatic recurrences.

Ninety-five percent of children who have recovered from their attack are able to lead a normal life. Approximately 5% lead a somewhat restricted life, but the majority are able to attend school and participate in most activities. Those having severe aortic or

mitral valve disease are restricted from strenuous activity and competitive athletics.

In severe cases of carditis with extensive valvular compromise, valve replacement is indicated. Mitral valve insufficiency can predispose to pneumonias.

A recent article in the *New England Journal of Medicine* by Veasy, et al.⁶ has documented an increase in the incidence of rheumatic fever in the Salt Lake City area. Additional outbreaks from other states have since been published.^{7,8} Previously published reports had documented the continuing decline in the incidence of acute rheumatic fever.^{3,6,9,10}

A sharp increase in the number of new cases of rheumatic fever and rheumatic heart disease over the past two years has been observed in Indiana. Approximately 75 new cases of ARF have been evaluated on the IU campus since the winter of 1985-86. The majority of the patients are evaluated and managed as outpatients with only those patients with severe carditis requiring admission. In the past, the majority of children were admitted for observation to determine if carditis would develop. This change in admitting fewer patients accounts for the continued decline in the total number

of patients with the hospital discharge diagnosis of ARF, while the actual incidence in the community is rising. With the changing hospital admission practices of today's physicians, simply reviewing the number of hospital admissions or discharges with the diagnosis of ARF does not reflect the incidence of the disease.

Theories abound to explain the annual decrease over the last several decades in the incidence of acute rheumatic heart disease. They include improved socioeconomic conditions, earlier case detection, a decrease in the incidence of streptococcal infections and a lessened virulence of the rheumatogenic serotypes of streptococcus.^{7,10,11} The disappearance of a cofactor which in combination with the streptococcus would produce ARF has been theorized, but no cofactor has ever been isolated.⁷ Prevention of recurrences through antibiotic prophylaxis has also been postulated; however, the decrease in the incidence of ARF began before the widespread use of antibiotics began.¹¹

We are not aware of any significant change in the method of prescribing antibiotics in those patients with pharyngitis in whom strep throat is suspected. There has also been no significant change in the medical treat-

ment of the Indiana population that would account for this sudden increase in the number of new cases of acute rheumatic fever. Some authors postulate the presence of rheumatogenic strains^{6,10} or that the increased incidence represents a cyclical pattern of the disease not previously noted.¹⁰

The cases reported during the last two years also demonstrate a change in the classic presentation of acute rheumatic fever. We have noted patients presenting with vague abdominal discomfort with flu-type symptoms of malaise and fever in several cases. Many present without a history of previous pharyngitis, as was noted in the Utah⁶ and Ohio⁷ studies. Several of our patients presented with mitral insufficiency as the initial findings.

It is important to reiterate that the rapid strep screen had 20-25% false-negative results in the Ohio study. Thus we agree with Ferrier¹¹ that a positive result is confirmatory, but a negative result must be cultured for definitive diagnosis.

Conclusion

Acute rheumatic heart disease is not

a disease of the past. These recent outbreaks should remind physicians of the complications of pharyngitis from Group A Beta-hemolytic streptococcal infections. Continuation of the time honored practice of establishing the diagnosis and aggressive treatment is emphasized. All physicians must have a heightened awareness that the classic presenting signs and symptoms of ARF may be changing. It is disturbing to note how nonspecific and vague many of the presentations are, making an early diagnosis very difficult.

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Cipro[®] is indicated for the treatment of infections caused by susceptible strains of the designated microorganisms in the conditions listed below.

Lower Respiratory Infections caused by *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae*, *Proteus mirabilis*, *Pseudomonas aeruginosa*, *Haemophilus influenzae*, *Haemophilus parainfluenzae*, and *Streptococcus pneumoniae*.

Skin and Skin Structure Infections caused by *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae*, *Proteus mirabilis*, *Proteus vulgaris*, *Providencia stuartii*, *Morganella morganii*, *Citrobacter freundii*, *Pseudomonas aeruginosa*, *Staphylococcus epidermidis*, and *Streptococcus faecalis*.

Bone and Joint Infections caused by *Enterobacter cloacae*, *Serratia marcescens*, and *Pseudomonas aeruginosa*.

Urinary Tract Infections caused by *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae*, *Serratia marcescens*, *Proteus mirabilis*, *Providencia rettgeri*, *Morganella morganii*, *Citrobacter diversus*, *Citrobacter freundii*, *Pseudomonas aeruginosa*, *Staphylococcus epidermidis*, and *Streptococcus faecalis*.

Infectious Diarrhea caused by *Escherichia coli* (enterotoxigenic strains), *Campylobacter jejuni*, *Shigella flexneri*, and *Shigella sonnei** when antibacterial therapy is indicated.

*Efficacy for this organism in this organ system was studied in fewer than 10 infections.

Appropriate culture and susceptibility tests should be performed before treatment in order to isolate and identify organisms causing infection and to determine their susceptibility to ciprofloxacin. Therapy with Cipro[®] may be initiated before results of these tests are known, once results become available appropriate therapy should be continued. As with other drugs, some strains of *Pseudomonas aeruginosa* may develop resistance fairly rapidly during treatment with ciprofloxacin. Culture and susceptibility testing performed periodically during therapy will provide information not only on the therapeutic effect of the antimicrobial agent but also on the possible emergence of bacterial resistance.

CONTRAINDICATIONS

A history of hypersensitivity to ciprofloxacin is a contraindication to its use. A history of hypersensitivity to other quinolones may also contraindicate the use of ciprofloxacin.

WARNINGS

CIPROFLOXACIN SHOULD NOT BE USED IN CHILDREN OR PREGNANT WOMEN. The oral administration of ciprofloxacin caused lameness in immature dogs. Histopathological examination of the weight-bearing joints of these dogs revealed permanent lesions of the cartilage. Related drugs such as nalidixic acid, cinoxacin, and norfloxacin also produced erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species (SEE ANIMAL PHARMACOLOGY SECTION IN FULL PRESCRIBING INFORMATION).

PRECAUTIONS

General

As with other quinolones, ciprofloxacin may cause central nervous system (CNS) stimulation, which may lead to tremor, restlessness, lightheadedness, confusion, and very rarely to hallucinations or convulsive seizures. Therefore, ciprofloxacin should be used with caution in patients with known or suspected CNS disorders, such as severe cerebral arteriosclerosis or epilepsy, or other factors which predispose to seizures (SEE ADVERSE REACTIONS).

Crystals of ciprofloxacin have been observed rarely in the urine of human subjects but more frequently in the urine of laboratory animals. Crystalluria related to ciprofloxacin has been reported only rarely in man, because human urine is usually acidic. Patients receiving ciprofloxacin should be well hydrated, and alkalinity of the urine should be avoided. The recommended daily dose should not be exceeded. Alteration of the dosage regimen is necessary for patients with impairment of renal function (SEE DOSAGE AND ADMINISTRATION SECTION IN FULL PRESCRIBING INFORMATION).

Drug Interactions

Concurrent administration of ciprofloxacin with theophylline may lead to elevated plasma concentrations of theophylline and prolongation of its elimination half-life. This may result in increased risk of theophylline-related adverse reactions. If concomitant use cannot be avoided, plasma levels of theophylline should be monitored and dosage adjustments made as appropriate.

Antacids containing magnesium hydroxide or aluminum hydroxide may interfere with the absorption of ciprofloxacin, resulting in serum and urine levels lower than desired; concurrent administration of these agents with ciprofloxacin should be avoided.

Probenecid interferes with the renal tubular secretion of ciprofloxacin and produces an increase in the level of ciprofloxacin in the serum. This should be considered if patients are receiving both drugs concomitantly.

As with other broad-spectrum antibiotics, prolonged use of ciprofloxacin may result in overgrowth of nonsusceptible organisms. Repeated evaluation of the patient's condition and microbial susceptibility testing is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Information for Patients

Patients should be advised that ciprofloxacin may be taken with or without meals. The preferred time of dosing is two hours after a meal. Patients should also be advised to drink fluids liberally and not take antacids containing magnesium or aluminum concomitantly or within two hours after dosing. Ciprofloxacin may cause dizziness or lightheadedness, therefore patients should know how they react to this drug before they operate an automobile or machinery or engage in activities requiring mental alertness or coordination.

Carcinogenesis, Mutagenesis, Impairment of Fertility

Eight *in vitro* mutagenicity tests have been conducted with ciprofloxacin and the test results are listed below.

- Salmonella/Microsome Test (Negative)
- E. coli* DNA Repair Assay (Negative)
- Mouse Lymphoma Cell Forward Mutation Assay (Positive)
- Chinese Hamster V₇₉ Cell HGPRT Test (Negative)
- Syrian Hamster Embryo Cell Transformation Assay (Negative)
- Saccharomyces cerevisiae* Point Mutation Assay (Negative)
- Saccharomyces cerevisiae* Mitotic Crossover and Gene Conversion Assay (Negative)
- Rat Hepatocyte DNA Repair Assay (Positive)

Thus, two of the eight tests were positive, but the following three *in vivo* test systems gave negative results:

- Rat Hepatocyte DNA Repair Assay
- Micronucleus Test (Mice)
- Dominant Lethal Test (Mice)

Long-term carcinogenicity studies in animals have not yet been completed.

Pregnancy - Pregnancy Category C

Reproduction studies have been performed in rats and mice at doses up to six times the usual daily human dose and have revealed no evidence of impaired fertility or harm to the fetus due to ciprofloxacin. In rabbits, as with most antimicrobial agents, ciprofloxacin (30 and 100 mg/kg orally) produced gastrointestinal disturbances resulting in maternal weight loss and an increased incidence of abortion. No teratogenicity was observed at either dose. After intravenous administration, at doses up to 20 mg/kg, no maternal toxicity was produced, and no embryotoxicity or teratogenicity was observed. There are, however, no adequate and well-controlled studies in

CONVENIENT B.I.D. DOSAGE

Recommended dosage schedule

Infection Site*	Severity of Infection	Dosage
Respiratory Tract*	Mild/Moderate	500 mg B.I.D.
Bone and Joint*	Severe/Complicated	750 mg B.I.D.
Skin/Skin Structure*	Mild/Moderate	250 mg B.I.D.
Urinary Tract*	Severe/Complicated	500 mg B.I.D.
Infectious Diarrhea*	Mild/Moderate/Severe	500 mg B.I.D.

pregnant women. SINCE CIPROFLOXACIN, LIKE OTHER DRUGS IN ITS CLASS, CAUSES ARTHROPATHY IN IMMATURE ANIMALS, IT SHOULD NOT BE USED IN PREGNANT WOMEN (SEE WARNINGS).

Nursing Mothers

It is not known whether ciprofloxacin is excreted in human milk, however, it is known that ciprofloxacin is excreted in the milk of lactating rats and that other drugs of this class are excreted in human milk. Because of this, and because of the potential for serious adverse reactions from ciprofloxacin in nursing infants, a decision should be made to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use

Ciprofloxacin should not be used in children because it causes arthropathy in immature animals (SEE WARNINGS).

ADVERSE REACTIONS

Ciprofloxacin is generally well tolerated. During clinical investigation, 2,799 patients received 2,868 courses of the drug. Adverse events that were considered likely to be drug related occurred in 7.3% of courses, possibly related in 9.2%, and remotely related in 3.0%. Ciprofloxacin was discontinued because of an adverse event in 3.5% of courses, primarily involving the gastrointestinal system (1.5%), skin (0.6%), and central nervous system (0.4%).

The most frequently reported events, drug related or not, were nausea (5.2%), diarrhea (2.3%), vomiting (2.0%), abdominal pain/discomfort (1.7%), headache (1.2%), restlessness (1.1%), and rash (1.1%).

Additional events that occurred in less than 1% of ciprofloxacin courses are listed below. Those typical of quinolones are italicized.

GASTROINTESTINAL (See above), painful oral mucosa, oral candidiasis, dysphagia, intestinal perforation, gastrointestinal bleeding.

CENTRAL NERVOUS SYSTEM (See above), dizziness, lightheadedness, insomnia, nightmares, hallucinations, manic reaction, irritability, tremor, ataxia, convulsive seizures, lethargy, drowsiness, weakness, malaise, anorexia, phobia, depersonalization, depression, paresthesia.

SKIN/HYPERSENSITIVITY (See above), pruritus, urticaria, photosensitivity, flushing, fever, chills, angioedema, edema of the face, neck, lips, conjunctivae or hands, cutaneous candidiasis, hyperpigmentation, erythema nodosum.

SPECIAL SENSES blurred vision, disturbed vision, (change in color perception, overbrightness of lights), decreased visual acuity, diplopia, eye pain, tinnitus, bad taste.

MUSCULOSKELETAL joint or back pain, joint stiffness, achiness, neck or chest pain, flare-up of gout.

RENAL/URIDGENITAL interstitial nephritis, renal failure, polyuria, urinary retention, urethral bleeding, vaginitis, acidosis.

CARDIOVASCULAR palpitations, atrial fibrillation, ventricular ectopy, syncope, hypertension, angina pectoris, myocardial infarction, cardiopulmonary arrest, cerebral thrombosis.

RESPIRATORY epistaxis, laryngeal or pulmonary edema, hiccough, hemoptysis, dyspnea, bronchospasm, pulmonary embolism.

Most of these events were described as only mild or moderate in severity, abated soon after the drug was discontinued, and required no treatment.

In several instances, nausea, vomiting, tremor, restlessness, agitation, or palpitations were judged by investigators to be related to elevated plasma levels of theophylline possibly as a result of a drug interaction with ciprofloxacin.

Adverse Laboratory Changes Changes in laboratory parameters listed as adverse events without regard to drug relationship:

Hepatic - Elevations of ALT (SGPT) (1.9%), AST (SGOT) (1.7%), alkaline phosphatase (0.8%), LDH (0.4%), serum bilirubin (0.3%).

Hematologic - eosinophilia (0.6%), leukopenia (0.4%), decreased blood platelets (0.1%), elevated blood platelets (0.1%), pancytopenia (0.1%).

Renal - Elevations of Serum creatinine (1.1%), BUN (0.9%).

CRYSTALLURIA, CYLINDRURIA, AND HEMATURIA HAVE BEEN REPORTED.

Other changes occurring in less than 0.1% of courses were: Elevation of serum gamma-glutamyl transferase, elevation of serum amylase, reduction in blood glucose, elevated uric acid, decrease in hemoglobin, anemia, bleeding diathesis, increase in blood monocytes, and leukocytosis.

OVERDOSAGE

Information on overdosage in humans is not available. In the event of acute overdosage, the stomach should be emptied by inducing vomiting or by gastric lavage. The patient should be carefully observed and given supportive treatment. Adequate hydration must be maintained. In the event of serious toxic reactions from overdosage, hemodialysis or peritoneal dialysis may aid in the removal of ciprofloxacin from the body, particularly if renal function is compromised.

DOSAGE AND ADMINISTRATION

The usual adult dosage for patients with urinary tract infections is 250 mg every 12 hours. For patients with complicated infections caused by organisms not highly susceptible, 500 mg may be administered every 12 hours.

Respiratory tract infections, skin and skin structure infections, and bone and joint infections may be treated with 500 mg every 12 hours. For more severe or complicated infections, a dosage of 750 mg may be given every 12 hours.

The recommended dosage for infectious diarrhea is 500 mg every 12 hours.

In patients with renal impairment, some modification of dosage is recommended (SEE DOSAGE AND ADMINISTRATION SECTION IN FULL PRESCRIBING INFORMATION).

HOW SUPPLIED

Cipro[®] (ciprofloxacin HCl/Miles) is available as tablets of 250 mg, 500 mg, and 750 mg in bottles of 50, and in Unit-Dose packages of 100 (SEE FULL PRESCRIBING INFORMATION FOR COMPLETE INFORMATION).

* Due to susceptible strains of indicated pathogens. See indicated organisms in Brief Summary.

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Neonatal Oxygen Monitoring



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MARY JO STINE, M.D.¹
GARY GLADIEUX, M.D.²
LOUISE TETRICK, M.D.²
Indianapolis

MEASUREMENT of arterial oxygenation is crucial in the care of newborns with respiratory disease. Until recently, the "gold standard" was the umbilical artery line with intermittent arterial blood gas sampling. Newer technology has introduced less invasive, continuous oxygen monitoring: transcutaneous oxygen measurements and oxygen saturation. These modalities will be assessed and a critical review of our Methodist Hospital experience with oxygen monitoring will be presented.

Arterial Lines

Arterial lines^{1,2} allow for undisturbed arterial blood gas (ABG) sampling and blood pressure monitoring. Peripheral arterial catheters can generally be inserted percutaneously in newborns without much difficulty into radial or posterior tibial arteries with 24- or 22-gauge intravenous canulas. Umbilical artery catheters (UACs) are inserted into an umbilical artery after careful dilatation of the vessel in the umbilical stump. A 3.5 or 5 Fr catheter is threaded into the aorta with the tip positioned to lie at either a "high" (between T₄ and T₁₁) or a "low" (at L₄) placement site.

Unfortunately, there are numerous significant complications associated with arterial lines, especially umbilical artery lines.² The insertion of these catheters is justifiable only if the benefits they provide outweigh the

potential risks to the patients. Limb ischemia is noted in up to 20% of UACs and asymptomatic thrombosis has been documented in up to 90%. Renal hypertension and infarction of bowel have been reported following embolization of catheter-related thrombi. Arterial lines are foreign bodies and can serve as sources for infection. Colonization of UACs has been reported in as many as 57% of catheterizations, although catheter-related bacteremia occurs in only 5%. Blood loss can be significant either as a result of frequent blood gas procurement or accidental disconnection of the tubing. Other, albeit rare, complications of arterial lines include vascular perforation, aneurysms, nerve palsies, skin necrosis and bladder injury.

Noninvasive Oxygen Monitoring

Transcutaneous oxygen measurement techniques³ are now readily available and fairly easy to use. These devices provide continuous rather than intermittent monitoring, thereby potentially reducing episodes of hypoxemia and hyperoxemia and enhancing ventilator manipulations. Continuous oxygen monitoring can also reduce the number of arterial blood gas determinations.

The two types of transcutaneous oxygen monitors are the TcPO₂ monitor and the oxygen saturation monitor or pulse oximeter. The TcPO₂ monitor employs a heated pO₂ electrode applied to the skin and measures the oxygen that diffuses from the skin capillaries. This value correlates with arterial oxygen tension if there is normal peripheral perfusion. Transcutaneous pCO₂ monitoring is now also available.

The principle of pulse oximetry is based upon the differences in light transmission through a newborn's finger or toe produced by different

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hemoglobin oxygen saturations. The sensor is not heated and is less dependent on skin perfusion than is the TpO_2 monitor. Response time is fast and calibration is automatic. One drawback to the pulse oximeter is the insensitivity of measurements when arterial oxygen tensions exceed 80 to 90 mm Hg due to the shape of the hemoglobin-oxygen dissociation curve. Other minor limitations include movement artifact and sensor sensitivity to external light.

Transcutaneous oxygen methods are used routinely in most newborn intensive care units. Their reliability and accuracy tend to correlate with the staff's familiarity and experience with the techniques. These technologies have improved the management of newborns with respiratory disease and offer potential benefits in surgery, the delivery room, and on neonatal transports.

Chart Review

Charts on all Methodist Hospital newborn intensive care unit patients requiring intermittent mandatory ventilation (IMV) in 1986 were reviewed. All the babies were monitored with noninvasive techniques. Sixty-seven babies required IMV and, of these, 37 (55.2%) had arterial lines. Thirteen had peripheral arterial lines (PALs) and 24 had UACs. Complications were documented in 12.5% of the arterial lines; 80% of these occurred with UACs and the remainder with PALs. The complications included misplacement, accidental extubation, focal

bowel necrosis, and blanched extremities. The number of ABGs differed significantly for those babies on IMV who had an arterial line compared to those who did not: 27.3 per baby with a line and 3.5 per baby without a line. This comparison is most likely biased by the assumption that arterial lines are most likely reserved for the babies with the most severe lung disease.

Four babies had arterial lines although they did not require IMV. Three of these (all transports) were UACs, and the maximum number of ABGs obtained on any one was eight. One of these babies subsequently developed renal failure.

Certain problems were identified by this chart review. In several babies, lines were inserted despite minimal or no evidence of lung disease. In one case, an esophageal intubation was overlooked in the midst of a UAC attempt. One baby with meconium aspiration received his UAC prior to intubation and initiation of pulmonary toilet. There was a tendency to "overventilate" babies (maintain tightly controlled pCO_2 's less than 40) in babies with arterial lines. Finally, in one baby the diagnosis of cyanotic congenital heart disease was significantly delayed because of arterial line placement attempts.

Conclusion/Recommendations

Oxygen monitoring is essential in the management of newborns with respiratory diseases. Fortunately, noninvasive monitoring is now

available and has reduced the absolute necessity for arterial lines. The noninvasive techniques give continuous readouts and are generally dependable and easy to use. Arterial lines afford the luxury of ABGs but are associated with a variety of complications.

As when considering any procedure or management plan, benefits and risks should be assessed. One should not perform a procedure unless the benefits outweigh the risks and only when there is a reasonable likelihood that the procedure will improve a patient's care.

From our experience, it appears prudent for one to wait before automatically inserting an arterial line, to be sure the baby is stable prior to the procedure and to assess that the line is indeed necessary. Secondly, we recommend attempting a PAL before inserting the UAC in light of the increased complication risk associated with UACs. Finally, some cases of significant lung disease can and have been successfully managed with only the noninvasive techniques.

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Irving Tubal Sterilization: Report of 634 Procedures

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Abstract

Six hundred thirty-four Irving tubal sterilizations are reported as postpartum, cesarean section, or interval procedures from 1969 through 1983. There were no complications or morbidity. No patient has subsequently experienced a pregnancy. Since the appearance in 1978 of the laparoscopy bipolar cautery technique in our practice, the majority of interval sterilizations have been done in this manner. As an interval procedure, laparoscopy offers a low

failure rate and an outpatient setting with rapid recovery. Because the postpartum and cesarean section sterilization recovery will be unaltered by the tubal method, we feel the Irving method should be considered. The present series indicates that Irving tubal ligation may be performed safely and efficiently. The negligible failure rate of Irving sterilization and its potential for reversibility make it an attractive procedure that should be offered to women seeking sterilization.

CHANGING SOCIAL ATTITUDES and liberalization of rules concerning sterilization have led to a large increase in female sterilization procedures performed each year. Shepard¹ and Hulka² have estimated that in 1968, 1971 and 1975, there were, respectively, 180,000, 265,000 and 675,000 female sterilizations performed. Although many techniques are available, few patients are offered a choice of procedure. Thorough and accurate counseling regarding effectiveness and complications of the various methods is seldom provided. The Irving technique^{3,4} has long been accepted to be essentially 100% effective^{4,5,6} but is not commonly performed or offered to the patient because of assumed complexity and complications of the procedure.⁷

It is the purpose of this paper to report our experience with the Irving

technique in 634 patients from 1969 through 1983 during postpartum, interval and cesarean section tubal sterilizations. It is felt that the Irving tubal sterilization can be performed safely and efficiently, and, because of its negligible failure rate, it should be offered to the patient seeking surgical sterilization.

Methods and Materials

After a second pregnancy following Pomeroy tubal sterilization, author B.R.H. began performing surgical sterilization by the Irving technique in 1969. Review of office records produced the names of all patients who had tubal sterilizations performed by authors B.R.H. and J.A.H. from 1969 to 1983. Hospital records of all admissions to date for each patient were reviewed. All outpatient records also were reviewed. The information from these sources was used in this report.

Description of Operation

Irving⁴ in 1924 reported a new method for surgical sterilization. The procedure involved division of the tube and burying the proximal cut end into

the myometrium. Irving recommended burying the distal cut end into the broad ligament. In 1954, Irving³ reported 814 patients who had had the procedure without operative accidents or subsequent pregnancies. He also said that it was not necessary to bury the distal cut end into the broad ligament.

In the present series, the Irving procedure was performed in the following manner. A mid-segment of tube is grasped and elevated. An avascular area of mesosalpinx just under the tube is identified and a hemostat pushed through and opened widely. The mesosalpinx is separated from the tube with a minimum of bleeding. A free tie is then used to ligate the distal end of the tube. The double-armed suture is used to ligate the proximal end of the tube.

The segment of tube between the ligatures is then removed for histologic study. Care is taken to remove only the minimum amount of the tube necessary for pathological confirmation. This is a modification of the Irving technique as he did not remove any portion of the tube.

From: Logansport Clinic for Women, Inc., Number 6 Chase Park, Logansport, Ind. 46947. Dr. James A. Hall is Assistant Clinical Professor, Department of Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis.

A stab wound is then made either on the anterior or posterior surface of the uterus in an area that will accept the proximal end of the tube without a significant amount of tension. With the aid of a hemostat and a double-armed traction suture, the proximal cut end is pulled into the myometrium (*Figures 1 and 2*).

A separate stitch is usually used to anchor the tube in the myometrium. It is important to avoid placing a suture into the interstitial portion of the tube which might produce fistula formation. Fine 3-0 double-armed suture is preferable to large suture or free needles. The size of the needle wound in the uterine serosa will be smaller and bleeding will be diminished. The distal cut end of the tube is not buried. Should the raw surface of the mesosalpinx continue bleeding, it can be reperitonealized easily with free ties.

The choice of incision varied with the timing of the procedure. Postpartum tubals were performed through a 3 to 5 centimeter subumbilical vertical incision. Interval procedures were done with a transverse mini-lap incision unless a prior scar existed. The mini-lap incision varied from 4 to 6 centimeters in length and was placed 2 centimeters above the symphysis. This places the incision within the pubic hair and enhances the cosmetic appeal of the procedure. Sterilization at the time of cesarean section did not require a change from the incision planned for delivery.

All interval procedures were performed as inpatients. Patients were encouraged to go home 24 hours post-operatively, but the time of release was largely left up to the patient. Therefore, many patients stayed an extra day or more to be completely ready to resume full activities when released. All procedures were performed under general anesthesia, and the Trendelenburg position greatly aided in visualization.

The uterine fundus was brought into the surgical field on the interval cases

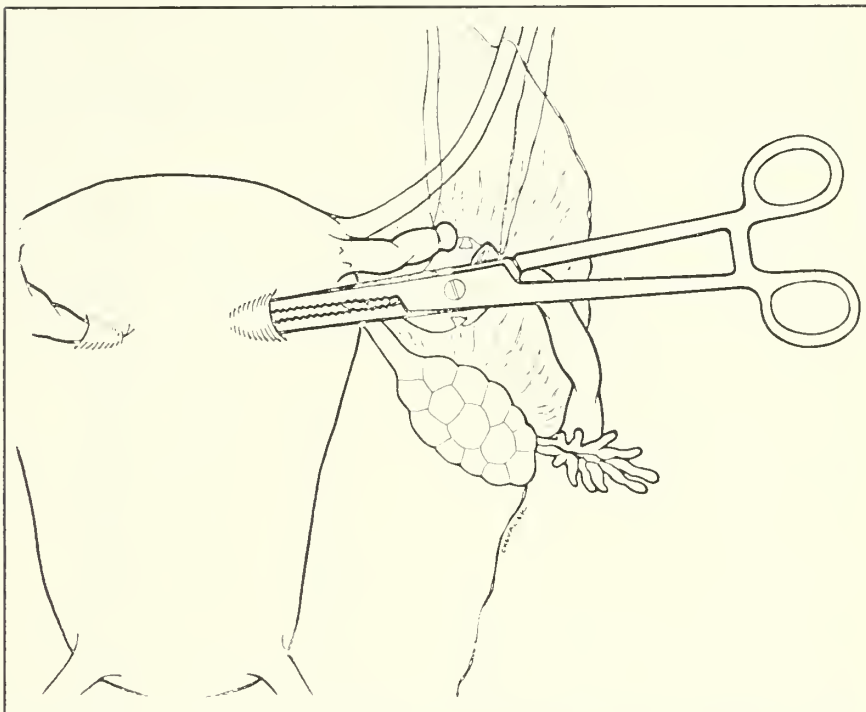


FIGURE 1: A hemostat is pushed into the myometrium in order to create a tunnel.

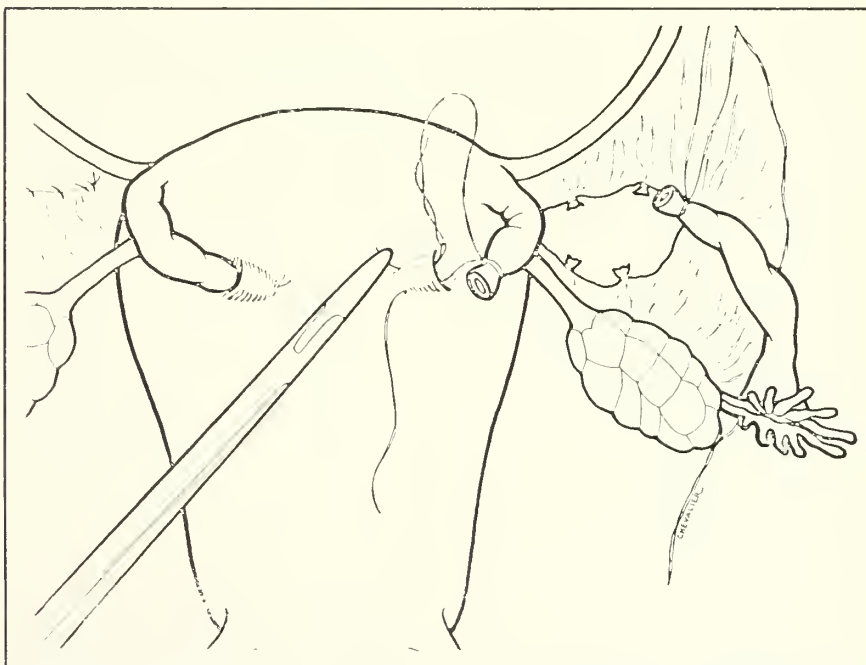


FIGURE 2: With the aid of a traction suture, the proximal cut end of the tube is pulled into the myometrium. The distal cut end is left as shown.

by pulling the uterus out of the pelvis with a small uterine elevator or pushing the uterus up with an intrauterine dilator. To avoid bladder injury, the bladder must be emptied before abdominal incision.

When author J.A.H. joined the practice in 1978, laparoscopy sterilizations were offered. Because of the shorter hospital stay (usually outpatient type setting) and quicker recovery, the majority of interval procedures recently have been done by laparoscopy bipolar cautery. However, all patients are counseled regarding varying methods and their differences such as failure rates, length of hospital stay, recovery time at home and reversibility.

Results

From 1969 through 1983, 634 Irving tubal ligations were performed. Three hundred sixty-two were postpartum, 171 were interval, and 100 were at the time of cesarean section (Table 1). The average time to perform interval Irving sterilization was 30 minutes. The postpartum and cesarean section sterilizations were easily done in a length of time not significantly different from a Pomeroy procedure.

The length of hospitalization postoperatively was reviewed. All interval patients were released by the fourth postoperative day. All postpartum patients were released by the second postoperative day. The Irving tubal ligation did not lengthen the hospital stay in any of the cesarean section patients.

Surgical morbidity is defined as any surgical complication, postoperative problem, use of antibiotics, or temperature equal to or greater than 100.4 degrees more than 24 hours postoperatively. Early morbidity was defined as that which occurred while in the hospital and late morbidity that which occurred after release. Of 634 patients, only five had early morbidity. One postpartum and one interval patient developed urinary tract infections, and another postpartum patient had a wound cellulitis. Two patients

Year	Type and Number Performed				
	Post-partum	Interval	At the Time of Cesarean Section	Following Spontaneous Abortion	Total
1969	1	0	0	0	1
1970	6	3	2	0	11
1971	13	7	1	0	21
1972	19	6	4	1	30
1973	19	14	5	0	38
1974	36	28	10	0	74
1975	38	9	13	0	60
1976	43	29	4	0	76
1977	41	33	1	0	75
1978	30	29	2	0	61
1979	25	8	5	0	38
1980	35	4	15	0	54
1981	23	0	17	0	40
1982	18	1	9	0	28
1983	15	0	12	0	27
TOTAL	362	171	100	1	634

(one postpartum and one interval) had temperatures of 100.8 degrees on the second postoperative day that resolved spontaneously without treatment or sequelae.

There were no surgical complications or operative accidents. There was no indication in any patient of postoperative hemorrhage. There were no bladder, bowel or uterine lacerations or perforations. One patient developed late morbidity. She had an interval ligation and developed a wound seroma that spontaneously resolved. There have been no known intrauterine or extrauterine pregnancies in any of the 634 patients following Irving tubal sterilization.

Discussion

Consideration should be given to the efficiency, safety, long-term sequelae and effectiveness of female sterilization procedures. Since the patient requests the procedure, it is appropriate that

she be advised concerning the various accepted techniques. Our patients are counseled regarding the various methods of sterilization.

Since author J.A.H. joined the practice in 1978, the majority of patients requesting an interval procedure have chosen the laparoscopy approach. However, some patients have been willing to be admitted as inpatients and have a slightly longer recovery time to benefit from the lower failure rate of the Irving procedure with its mini-laparotomy incision.

Because postpartum and cesarean section patients requesting sterilization require a laparotomy incision regardless of the tubal method, we feel the Irving technique is the method of choice. It takes only a few minutes more to perform than a mid-segment resection or Pomeroy and thus seems worth the extra effort because of the lesser failure rates. Between Irving's series³ and the present series, over

1,400 Irving procedures have been performed without a single complication and, thus, the safety of the procedure is well established.

Tubal sterilization failures can be classified by etiology into four groups:

1. Pregnancy at the time of sterilization.
2. Unknown cause.
3. Surgical failure including physician's error or equipment malfunction.
4. Method failure.

When discussing sterilization procedures, it is etiology numbers 3 and 4 that receive most of the attention. The most desirable sterilization technique has a low failure rate as well as minimal risk. Failure rates of various techniques are listed in *Table 2*.

The American Association of Gynecological Laparoscopists⁸ found by patient survey that, due to the patient's failure to inform the sterilizing physician of pregnancy, it may be assumed that 1.5 times as many patients actually have later pregnancies as opposed to those known to conceive. The Irving and Uchida techniques have essentially no failure rate; this is the result of burying the proximal cut end of the tube. The only Irving failure was reported in 1959 by Hornstein.⁹ The patient had an abdominal pregnancy 136 months after sterilization, and, since the pelvis was not inspected during the exploratory laparotomy, no explanation was possible regarding the cause of the failure.

The problem of failures following tubal sterilization is magnified by the fact that many are ectopic gestations. Prystowsky¹⁰ reported the alarming fact that 23.5% of pregnancies following postpartum tubal ligation with various techniques were tubal gestations. Haynes¹¹ later reported that 30% of pregnancies following Madlener's or Pomeroy's sterilization were tubal gestations. This finding makes it even more important to select techniques with low failure rates. Along with a discussion of failure rates and complications, the patient should be informed that a subsequent pregnancy may be

TABLE 2
Reported Failure Rates of Various Female Sterilization Procedures

Procedure	Number	Failures	% Failure Rate	% Ectopic Gestation of Failures
Madlener	7,829	113	1.44	30
Pomeroy	5,477	22	0.40	30
Cornual Resection	311	9	2.89	
Laparoscopic coagulation and cutting	12,806	55	0.40	14.5
Laparoscopic coagulation	5,724	14	0.20	42.9
Laparoscopic bipolar coagulation	14,895	27	0.18	11
Falope Ring	4,092	18	0.44	60
Hysteroscopic fulguration	1,687	73	4.3	20.6
Kroener fimbriectomy	200	0	0	
Fimbriectomy	488	12	2.4	
Hemoclip by direct application	1,861	31	1.6	6.4
Hemoclip by laparoscopy	61	15	24.6	6.7
Spring clip by laparoscopy	977	22	2.2	0
Uchida	20,000	0	0	
Irving	1,488	1	0.069	100 (only one failure reported)

From 5, 15, 14, 9, 16, 17, 18, 11 and the present series.

ectopic in location. Published rates of ectopic gestation among total pregnancies after tubal sterilization are listed in *Table 2*. Certainly, when failures as well as ectopic gestations are considered, procedures such as Irving and Uchida become more attractive.

It is agreed that the primary choice of sterilization procedure should not rest on the possibility of successful reconstruction. However, because some women will want reversal, it is reasonable to favor the procedure that

offers a significant chance for reversal without compromising the failure rate. Improved techniques for reconstruction such as microsurgery should discourage destructive procedures.¹² Extensive tubal cauterization, removal of a significant length of the tube, or fimbriectomy will preclude reasonable attempts at reconstruction.^{2,12}

In the present series, care is taken to remove only a minimal amount of fallopian tube and to leave a significant portion of tube in the proximal loop.

This should allow a reasonable chance for successful reanastomosis.^{12,13}

In the medical-legal climate of the 1980s, we feel that patients should receive adequate counseling regarding the various methods of tubal sterilization. One wonders about the legal exposure of the patient who becomes pregnant following a sterilization if she finds out a procedure existed with a lesser failure rate than the method she had performed and she was not counseled preoperatively about that fact.

The same exposure exists for the patient desiring reversal and, because of the destructive method of tubal performed on her, she has little choice of successful repair. Because this is an elective procedure, we feel that the patient who requests sterilization and receives adequate counseling also can select the method she desires. In our current practice, nearly all women desiring an interval sterilization select the laparoscopy bipolar cautery technique. However, because the obstetrical events dictate the length of hospitalization and recovery period, the Irving procedure, with its negligible failure

rate, ease of performance and excellent chance of reversal, is the method of choice for our patients requesting sterilization following vaginal delivery or cesarean section.

We believe Irving's comments in his 1950 paper are still applicable: "While this operation requires for its performance a few more minutes than does that of Pomeroy, it can be completed rapidly enough, and we believe that the patients' interests are better served by security than by haste."³

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Going to Washington? Look Out for Potomac River Fever

PHILIP BALL, M.D.
Muncie

A patient of mine recently announced that he and his family were moving to the Washington, D.C. area. He asked if it would be necessary for them, in moving to our nation's capital, to take any shots or carry out any particular precautions about disease.

My patient seemed a little surprised when I told him there were a number of public health precautions. Here are

the most important ones:


1. Take a series of shots to prevent Potomac River Fever. This is a disease that causes the head to swell and general disorientation to set in.
2. Don't drink the local water. In the past, it apparently has been responsible for causing the bloats and fiscal irresponsibility.
3. Don't imbibe too much of the potable beverages available at Washington cocktail parties. These dangerous fluids have been responsible for causing marital infelicity, con-

fusion and people jumping into tidal basins.

4. Don't listen to any word-of-mouth confidences. Most of them are lies started by Washington lobbyists or agents from Moldavia, intended to cause citizen dissatisfaction.
5. Don't breathe too deeply of the air in Washington. It has been known to cause delusions of grandeur.
6. Have an evacuation route planned in advance so, if the fallout of political baloney gets too deep, you can leave in a hurry.



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Anaphylaxis and Anaphylactoid Reaction: Acute, Biphasic and Protracted

C. WILLIAM GOEBEL, M.D.
Fort Wayne

DEVELOPMENTS IN THE understanding of anaphylaxis, its causes and treatment and the risk of the commonly used beta blockers warrant discussion for the benefit of all physicians.

Anaphylaxis is a syndrome of fatal or life-threatening symptoms from sudden release of mediators from mast cells. The symptoms are:

- Rapidly evolving respiratory obstruction, either lower airway obstruction as in asthma or laryngeal obstruction due to spasm or edema.
- Vascular hypotension, generalized itching, swelling and hives.
- Feeling of impending doom.

If the presence of immunoglobulin E (IgE) can be demonstrated, the reaction is considered to be anaphylaxis, such as occurs with penicillin. If one is not able to demonstrate IgE, the reaction is considered anaphylactoid. Anaphylactoid reactions include reactions to most of the radio contrast media and aspirin. The newer nonionic preparations of radio contrast materials seem safer than the older preparations.²

Exercise-induced anaphylaxis is a recently described syndrome that may occur, for example, in marathon races. About one-half of the reported cases seem related to eating particular foods

before running. Celery has been frequently the cause, and I had one case from eating cinnamon sticks.

In a recent study of severe anaphylaxis, several new observations were made.^{1,4}

1. None of the studied cases followed allergy testing or treatment.
2. Reactions occurring later than 30 minutes were significantly more likely to be complicated than those of earlier onset.
3. Oral ingestion of the stimulating agent was more apt to be followed by a complicated course.
4. Biphasic reaction, i.e., peaking four to eight hours after initial symptoms, was important because some delayed reactions were life-threatening and adequate corticosteroids did not prevent the delayed reaction. These patients should be closely observed for at least 12 hours after the initial episode is treated.
5. Protracted reactions lasting up to two days were frequently observed in patients on beta blockers.

Particularly, we would call attention to the fact that beta blocking drugs seriously increase the risk of unfavorable resolution of the episode of anaphylaxis, whether it is caused by environmental exposure, therapeutic or diagnostic agents or allergy immunotherapy.^{1,6}

When a suitable substitute can be used, such as calcium channel blockers, the substitution should be made in patients who have allergy or are being challenged by substances that may result in anaphylaxis or anaphylactoid reaction.

In regard to allergy immunotherapy, the risk of severe anaphylaxis is rare but real. Since 1946, 46 fatalities have been studied from an estimated 7 to 10

million allergy injections per year (46/400,000,000 injections).⁴ The most significant risk factor is in patients on beta blockers even in the form of eye drops.

Deaths have occurred most frequently in:

1. Patients who are asthmatic;
2. Patients who received inordinate dosage due to newly prepared extract;
3. Patients receiving injections during their season of exposure to sensitive substances; four of 10 deaths were in patients who were wheezing at the time of injection;
4. Patients who have exceptionally strong reactions to allergy tests;
5. Patients who have previously had systemic reactions; and
6. Patients who were given intradermal skin testing (without preceding puncture or scratch tests).

Therapeutic intervention:

Early and repeated doses of epinephrine as needed every 15 minutes.

H₁ antihistamine—Vistaril (hydroxyzine) by injection 50 mg—repeated as needed, every four hours.

H₂ antihistamine—Tagamet (cimetidine) orally or by injection 300 mg repeated every four hours. In some reports⁵ it has restored normal blood pressure when other treatment failed.

Aminophylline intravenously if indicated, if patient is not currently on the drug, 7 mg/kg over 10 minutes, repeated every six hours. If patient is currently on theophylline, do not give additional until obtaining a blood theophylline level.

Solu-Medrol intravenously 40 mg stat and every four hours unless patient has adrenal insufficiency, from disease or from use of corticosteroids, then cortisone intravenously 200 mg every four hours would be preferred.

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Inhalation treatment may also be helpful: such as metered dose inhalers or nebulizer, metaproterenol-terbutaline or salbutamol and possibly epinephrine if laryngeal symptoms predominate. Atrovent may also be useful, especially in patients on beta blockers.

Intravenous administration of potassium balanced solution as needed with sympathomimetic material added if needed to maintain blood pressure, either epinephrine or dopamine.

We have discussed new practical steps to reduce the incidence of anaphylaxis either from natural exposure or medical intervention. The new concept of delayed or protracted anaphylaxis and its management was discussed.

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Mediastinal Abscess: Two Case Reports

BERJ ANTREASIAN, M.D.
Indianapolis

EVEN BEFORE THE era of antibiotics, mediastinitis was considered rare.¹ Neuhof² in 1936 reported six cases of mediastinitis, 25% of which were non-traumatic. Usually, *Beta-hemolytic streptococci* was the offending organism, but *Streptococcus pneumoniae* were also seen. Anaerobic strep and *Bacteroides* often were associated with odontogenic infections. Other organisms also have been reported.^{3,4}

In 1980, Hinshaw⁵ reported that 90% of acute mediastinitis was due to trauma, perhaps reflecting the abundant use of antibiotics in this era for the treatment of pharyngeal, odontic and other cervical infections.

Two case reports are hereby submitted because of the relative rarity and because of unusual presentations.

Case I: Woman Age 35

The patient had become ill June 13, 1982, with a mild coryza-like syndrome with rhinorrhea and congestion in her head and sinuses. There was some mild discomfort in the interscapular and suprascapular areas, but the following day, June 14, 1982, this became much more intense, and the symptoms also included a cough. There was discom-

fort in the above-mentioned interscapular area, trapezius area and anteriorly in the infraclavicular area. This persisted and, in the early morning of June 15, 1982, she became nauseated and vomited. A frontal headache ensued and was relatively prominent. She sought medical attention at that time and was found to have a slight fever but, on auscultation, clear lung fields, despite a raspy, brassy cough. A chest x-ray was taken on that date (*Figure 1*) that showed adenopathy in the right mediastinal area. On the evening of June 15, shortness of breath became a prominent symptom and on June 16, because of the marked dyspnea, she was admitted to the hospital as an emergency. Doxycycline had been started on June 15.

She had a past history of respiratory embarrassment at age 6, and bronchoscopy had been carried out at that time. She also was known to have had pneumonia with measles at age 3. In 1970, because of some question of exposure to tuberculosis due to PPD conversion of a sister, a chest x-ray was performed, but no abnormalities were noted.

Fifteen days before admission she had done some work in a lake cabin and had been in a barn in April of that year.

Physical examination disclosed an alert young lady who coughed quite frequently and appeared slightly tachypneic. The organs of the head and neck were not remarkable, and there was no significant pharyngitis nor adenitis in the supraclavicular or cervical areas. A few stridulous or sonorous inspiratory sounds were heard anteriorly over the anterior bronchi. No abnormal heart sounds were detected. The blood pressure was 130/70; the heart rate was 88 and regular. There was no hepatospleno-

megaly, axillary adenopathy or inguinal adenopathy.

Laboratory studies revealed an arterial pH of 7.50, a pCO₂ of 33 and a pO₂ of 57. WBC was 14,200 with 90% segs, 9 lymphocytes and 1 monocyte. The sedimentation rate was 69.

The patient was noted to be afebrile after admission. On June 18, bronchoscopy was performed with no positive findings, and a left scalene fat pad biopsy showed only reactive lymph nodes. On June 22, mediastinoscopy was performed for the purpose of obtaining a biopsy of the mediastinal adenopathy. However, when the scope was inserted, pus was seen immediately. Gram stain, acid-fast and fungal smears, and routine bacterial, acid-fast and fungal cultures were obtained, and all were negative. The fungal immunodiffusions for histoplasmosis, blastomycosis, coccidioidomycosis and aspergillosis were negative. The patient proved anergic to mumps and tuberculosis skin tests.

With the evacuation of the above-mentioned pus, the patient showed prompt improvement as did her x-ray two days later (*Figure 2*).

Case II: Woman Age 34

The patient, who had no previous antecedent symptoms, awakened the day before admission, April 28, 1984, with pain beneath the sternum and perhaps to the right in the parasternal area. She spent a restless night and the pain persisted throughout the day of admission. It seemed to be worse at times, particularly with movement, deep breath, cough or lying supine. She was seen in an outlying neighborhood clinic where a chest x-ray was taken (*Figure 3*), and arrangements were made for her to be admitted to the hospital.

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Publication of this paper funded by the Community Hospital Research Institute.

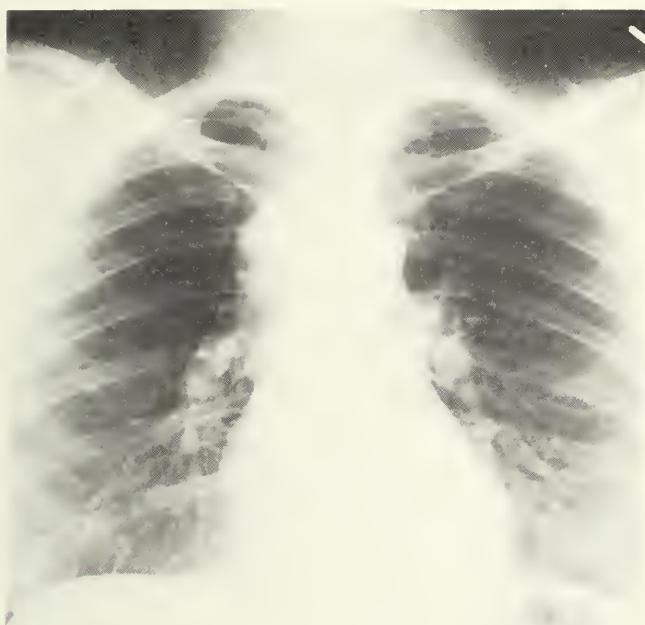


FIGURE 1

Her past history included some type of lesion in the left kidney as a child at 13. Apparently she had had a habit of chewing aspirin, and it was suspected perhaps she had some renal problem related to phenacetin. Since then, she had frequent, recurrent kidney infections with high fevers and chills. She had not had any of these, however, for several years. She was taking Demulen-21 as an oral contraceptive, which she had done for five years.

She denied any blows to the chest and, although she had had a cough since the onset of the illness, had had no antecedent respiratory symptoms.

Physical examination revealed her to be well developed and nourished, but in moderate discomfort. There was no adenopathy, and the lungs were clear to auscultation and percussion. There was some question of a pleuro-pericardial sound and a Grade I to II systolic ejection-type murmur. There was no swelling of the legs or calf tenderness. The admitting diagnosis was "probable acute pericarditis."

Laboratory studies revealed a WBC of 9,800 with 71% segs. Sedimentation rate was 31. Arterial pH 7.43, pCO₂ 35 with pO₂ 84 on room air.

The original x-ray (*Figure 3*) showed a paucity of vascular markings on the right and perhaps some widening of the waist of the heart.

The patient was afebrile and remained so throughout her entire hospital stay. A few days after admission the pain seemed to persist and became increasingly more severe, and increasing evidences of a respiratory insufficiency ensued. She refused further investigation of blood gases. On May 3, 1984, a ventilation and perfusion lung scan was performed (*Figures 4 and 5*). Because of the marked discrepancy of the contralateral defects, it was felt that labeling had been in error. Therefore it was repeated the following day, May 4, 1984. In the meantime, the patient's condition had progressively deteriorated with increasing dyspnea and cyanosis. A repeat of her chest x-ray (*Figure 6*) revealed increasing widening of the mediastinum and bilateral



FIGURE 2

proximal infiltrates. The lack of vascular markings on the right again was noted. A CT scan (*Figure 7*) revealed what appeared to be a mass (arrow) in the mediastinum 6 cm in diameter.

She was taken for bronchoscopy on May 4, 1984, and found to have a 50% compression of the trachea, total occlusion of the left main stem bronchus and complete patency of the right main stem bronchus and branches. No intrinsic lesions were seen. Mediastinoscopy was then performed. Blunt dissection was used to carry the dissection down into the mediastinum posterior to the innominate artery. In the course of the dissection, a pocket of cloudy liquid was entered. Approximately 150 cc's was aspirated. While the patient had been cyanotic even while on 100% oxygen, immediately after the evacuation of this pus, her color pinked up. Specimens of lymph nodes were obtained. Gram stains, acid-fast and fungal smears and cultures were all negative. The lymph nodes revealed hyalinized and mineralized old granulomas with stains showing no organisms.



FIGURE 3

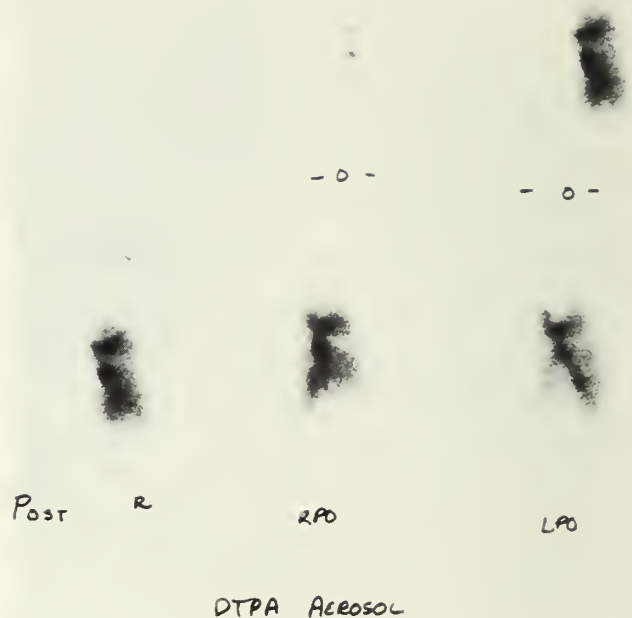


FIGURE 4

The day after mediastinoscopy, the patient was remarkably free of symptoms and, on May 9, 1984, (Figure 8), her x-ray had returned to normal. Fungal immunodiffusion for histoplasmosis, blastomycosis, coccidioidomycosis and aspergillosis were negative. A skin test for histoplasmosis was weakly positive while a PPD was negative.

Although histoplasmosis was not proven, it was felt prudent to embark on a course of therapy utilizing ketoconazole at 200 mg daily.

When last seen July 5, 1984, she was asymptomatic, and a chest x-ray was normal.

Discussion

While the first case presented early with symptoms of an upper respiratory

infection that rapidly deteriorated within a few days to an acute respiratory embarrassment (pO₂ of 57), a diagnosis of mediastinitis was not considered. The x-ray gave the impression of neoplasm (lymphoma) etc. The profound improvement after mediastinoscopy and the lack of recurrence supports the contention that this represents acute bacterial infection rather than a mycotic or tuberculous one. Why cultures were negative cannot be explained.

The second case is quite unusual in presenting only briefly with fever (one day) and apparently rising de novo in the mediastinum with no preceding pharyngeal or respiratory infection. Rapid deterioration to a life-threatening status was alarming and, with the findings of widened

mediastinum with a retrotracheal mass on CT, and a remarkable pulmonary scan, a rapidly expanding tumor was considered.

The value of the CT scan here cannot be underestimated. Heitzman, *et al.*⁶ proposed its use to study the mediastinum in 1977. Its use has been documented in other reports as well.^{4,7,8}

It must be added that, to this author's knowledge, there has not been previously reported any case of contralateral perfusion ventilation defects on pulmonary scans of this magnitude. When this dichotomy is encountered, in this author's opinion, it can only mean an expanding mediastinal mass.

Again the lack of culture of any organism in this case cannot be explained. Pharyngeal extension by lymph-

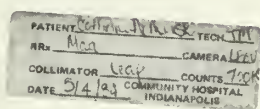


FIGURE 5



FIGURE 6

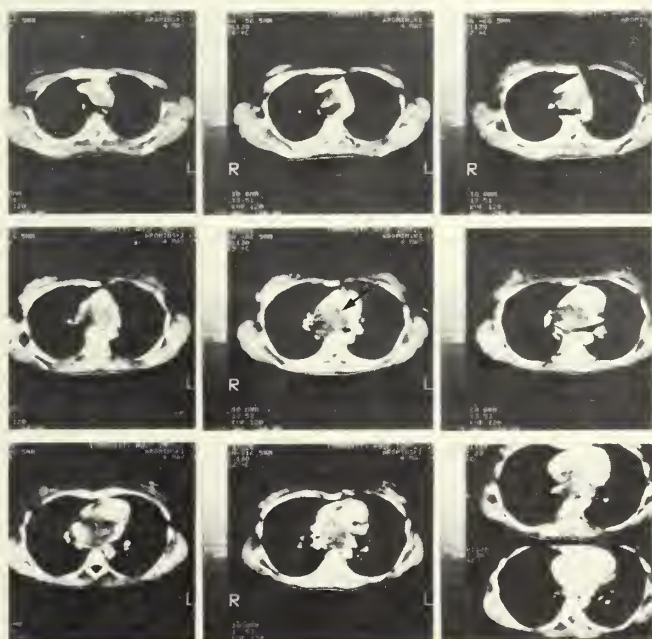


FIGURE 7



FIGURE 8

aties or extension through fascial planes in the neck, facilitated by the fluctuating negative intrathoracic pressure, seems to be the mechanism, in most cases, of acute mediastinitis.¹ This pathogenesis could not be demonstrated in this second case.

In summary, two cases of "sterile," acute mediastinal abscesses are presented. Chest pain made worse on lying supine and shortness of breath with widening of the mediastinum (although nodular in the first case) were the common findings here. The lack of fever or leukocytosis should not defer a consideration of mediastinitis in the differential diagnosis. The facility in making this diagnosis and relieving the abscess by mediastinoscopy is

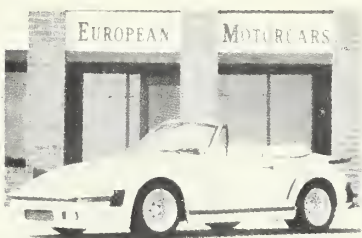
documented without the need for open thoracotomy or prolonged catheter drainage required after percutaneous aspiration.

Inasmuch as *Beta-hemolytic strep* is the most common organism, perhaps early use of penicillin or any other appropriate antibiotic would be in order as soon as a diagnosis of acute mediastinitis is considered in hopes of halting its progression.

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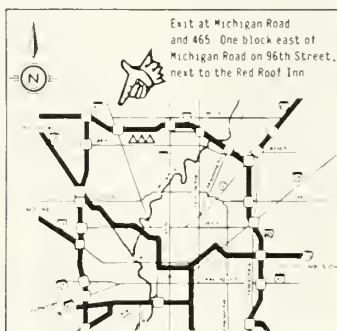
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Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H₂-receptor antagonists.

Precautions: General—1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests—False-positive tests for urobilinogen with Multistix[®] may occur during therapy with nizatidine.

Drug Interactions—No interactions have been observed between Axid and theophylline, chlorazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high dose males compared to placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement

compared to concurrent controls, and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive, and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery is not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, and the mouse lymphoma assay.

In a two-generation, perinatal and postnatal, fertility study in rats, doses of nizatidine up to 550 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose, and in Dutch Belted rabbits at doses up to 55 times the human dose, revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Nizatidine is secreted and concentrated in the milk of lactating rats. Pups reared by treated lactating rats had depressed growth rates. Although no studies have been conducted in lactating women, nizatidine is assumed to be secreted in human milk and caution should be exercised when nizatidine is administered to nursing mothers.

Pediatric Use—Safety and effectiveness in children have not been established. Use in Elderly Patients—Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among the more common adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to

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determine whether these were caused by nizatidine.

Hepatic—Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L), and in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic—Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H₂-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine than in placebo patients. Rash and exfoliative dermatitis were also reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported.

Overdosage: There is little clinical experience with overdosage of Axid in humans. If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous LD₅₀ values in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

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Infectious Waste Law Effective July 1

TINA SIMS
Editorial Assistant

IN JUNE 1987 children playing in a trash dumpster on the west side of Indianapolis found and smashed vials of AIDS-contaminated blood.

Press coverage drew attention to the fact that careless disposal of the infectious waste by a neighborhood health clinic was a potentially hazardous situation.

In response to the incident, the Marion County Health and Hospital Corporation enacted an ordinance that regulated the disposal of infectious waste.

The state of Indiana also responded. Legislators included a section on the treatment of infectious waste in a comprehensive AIDS bill passed during the 1988 Indiana General Assembly.

Beginning July 1, Indiana physicians will have to comply with the new infectious waste disposal law. The details of the infectious waste disposal provisions will be incorporated in rules to be developed this year by the Indiana State Board of Health.

Until the passage of the bill, doctors used federal OSHA and EPA guidelines in disposing of infectious waste. The new law orders the state board of health to adopt rules, considering the guidelines of the U.S. Environmental Protection Agency, U.S. Centers for Disease Control, U.S. Occupational Safety and Health Administration, the Indiana Department of Labor and the Indiana Department of Environmental Management.

The state board of health will adopt the rules after consulting with an ad-

visory committee composed of representatives of people or facilities that handle infectious waste. Dr. William H. Beeson of Indianapolis has agreed to serve as chairman of the advisory committee.

Other members will include representatives of waste disposal companies, medical or diagnostic laboratories, blood centers, pharmaceutical companies, academic research and industrial research laboratories, health facilities, health care provider offices, diet or health care clinics, veterinarians' offices, veterinary hospitals, emergency medical services providers and mortuaries.

"Until the New Rules Are Approved, Doctors Should Practice Basic Infection Control"

The committee will consider federal and local rules already in effect to avoid the possibility of adopting conflicting rules.

Although the state law takes effect July 1, the state board of health rules on infectious waste treatment will not be ready for approval until after that date. Until the rules are approved, doctors should practice basic infection control, according to Kathy Lucas, director of legal affairs at the state board of health.

Lucas said that until the specific requirements of the bill are spelled out, doctors should "be careful of what they place in an unsecured area." In other words, "Don't dump blood in a dumpster," she said.

Lucas said the board of health doesn't want the rules to be overly burdensome for doctors, but the public does need to be protected from a potential health threat.

Under the new law, whoever generates the waste will be responsible for ensuring that the waste is effectively treated and disposed of.

The new law defines infectious waste as "waste that epidemiologic evidence indicates is capable of transmitting a dangerous communicable disease." Infectious waste includes:

- Pathological wastes.
- Biological cultures and associated biologicals.
- Contaminated sharps, which refer to hypodermic or suture needles, syringes, scalpel blades, pipettes, lancets and broken glass that are capable of cutting or penetrating the skin and have been in contact with blood or body fluids.
- Infectious agent stock and associated biologicals.
- Blood and blood products in liquid or semiliquid form.
- Laboratory animal carcasses, body parts and bedding.

"Effective treatment," according to the new law, is defined as "treatment that reduces the pathogenic qualities of infectious waste to a point where it is safe to handle, that is designed for the specific waste involved and that is carried out in a manner consistent with rules adopted by the state board."

Treatment methods include incineration, steam sterilization, chemical disinfection, thermal inactivation and irradiation.

Dr. John E. Pless, an Indianapolis forensic pathologist, said the new law means that doctors can't deposit their used needles, scalpel blades and tubes of blood in the ordinary trash anymore because they have to be properly

decontaminated before they can be disposed of.

The new state law contains language similar to that in the Marion County ordinance.

Dan O'Connor, hazardous materials specialist with the Marion County Health Department, said so far his department has been investigating only complaints of improper disposal of infectious waste. Other inspections now being made only determine which facilities present more of a health risk because of the types of infectious waste they generate.

O'Connor said enforcement methods still are being considered. Possibilities include sending form letters to infectious waste generators asking them what they are doing to comply with the ordinance. The department has not yet determined a schedule for inspections of facilities generating infectious waste.

Violation of the ordinance could result in a written notice of the specific infraction and a timetable for compliance. A \$1,000 fine is a possibility. Penalties such as injunctions and restraining orders would be rare, O'Connor said.

During discussions before the Marion County ordinance was adopted, physicians expressed concern about the cost of complying with the rule, O'Connor said. Physicians with a small practice were particularly concerned about the expense, he said. At the same time, most also realized the need for some type of ordinance on infectious waste.

Dr. Frank Johnson, director of the Marion County Health Department, said doctors' concerns about infectious waste disposal rules include the cost

of disposal and the potential difficulty in recognizing a reputable waste disposal company.

"Nobody said it would be easy," Dr. Johnson said about the implementation of the new rules. Dr. Johnson also admits the implementation is more costly than he expected.

He said compliance will occur slowly, but all doctors eventually will obey the new requirements.

Although "we are holding providers responsible for their action," Dr. Johnson said that now his office is focusing on the investigation of complaints and high-risk locations, such as medical laboratories that produce large amounts of infectious waste.

Doctors looking for a waste disposal company should research the marketplace. Dr. Johnson suggests asking the following questions of such companies:

- How long have you been in business?
- Do you have access to an incinerator?
- Where do you dispose of your waste?

He also recommends obtaining the names of some of the company's current customers so that doctors can check the company's reputation.

Dr. Johnson said a waste disposal company that has been in business for several years and is operating in several states could be more reliable than a business that opened its doors in one location soon after an infectious waste disposal law was approved.

Some doctors don't know what kinds of questions to ask when arranging for waste disposal services, according to Kelli Colburn, area marketing representative for BFI. Some are unfamiliar

with the Marion County ordinance and the new state law, she said.

Colburn said doctors should be looking at other factors besides cost when looking for a waste disposal company. She suggests that doctors ask waste disposal companies if they are insured and bonded. "What kind of proof do you offer me that my waste is properly disposed of?" is another question doctors should ask.

Such proof is available from waste disposal services in the form of manifests that track the path of the waste from pick-up to incineration. The document includes information on the number of boxes of waste and dates of pick-up and incineration of waste.

Costs usually are based on the amount of waste and the number of pick-ups per month. Colburn estimates that a doctor who does not perform surgery in his office will have an average of one or two boxes of waste per month.

Some companies such as BFI sell a "cradle to grave" service. Doctors choosing such a service must be responsible for separating infectious waste from other waste and disposing of needles in a special puncture-proof box. The waste disposal company then takes over by treating and disposing of the waste.

Nila Miller, a sales representative from Chem-Care, Inc., suggests that her customers have a written protocol for disposing of infectious waste so that the entire staff is familiar with the procedures.

More information on this law will be available in a future issue of *INDIANA MEDICINE*.

Medicine's Lighter Moments

TED L. GISELL, M.D.
Indianapolis

ONE BEAUTIFUL WEDNESDAY afternoon many years ago, I was among the large crowd playing golf at Hillcrest Country Club in Indianapolis. Some dramatic changes have been made in the clubhouse since the episode I am about to describe took place. At that time, however, a large open patio off the clubhouse faced the first tee and the 18th green. During the summer, several large urns on pedestals were filled with exotic flowers and placed on the patio.

On this particular day, a boy about 5 years old was exploring the country club grounds. He had been brought to the club for the afternoon to swim and enjoy an outing at the country surroundings. We learned later that the boy lived intermittently in orphans' homes and foster homes until just before his visit to Hillcrest. He was staying on a trial basis with a couple who were members of the country club and were considering adopting him.

The boy, possibly because of his background, displayed an inquisitive and aggressive nature. During his exploration of the club, he got himself into some questionable circumstances and finally was seen climbing on a pedestal containing a large cement urn. When he reached the top of the pedestal, his weight pulled the heavy urn, which weighed between 150 and 200 pounds, slightly off-center. In an attempt to correct the problem, the boy knocked down the urn and

pedestal, and the urn landed on his stomach.

Because Herbert Egbert, my partner, and I were on the 18th green, we were called to help the seriously injured boy. Our examination revealed he had received a massive intra-abdominal injury of some nature, possibly a ruptured liver, spleen or bowel, his condition was unstable, his pulse rate was accelerating rapidly and his blood pressure was falling.

THE URN

Instead of waiting for an ambulance to arrive at the country location, we bundled the boy up in the back seat of a car and drove to the emergency room at Methodist Hospital. As soon as we reached the hospital and were able to monitor his vital signs and get fluid replacement started, we realized that emergency surgery was imminent.

During this ordeal, the boy was distraught and tearful. His attitude and disruptive actions interfered with our medical care. As I talked to him in an effort to calm him down, I discovered that he was disturbed, not primarily because of his massive injury but because he thought his behavior might have jeopardized his chances of being adopted by his foster parents. He thought he had done something so inexcusable that he would be sent back to the orphanage.

I promised the boy that I would do all I could to re-establish his rapport with his foster parents. I also promised that I would pay for any compensation the club would demand for damages to the urn and the flowers. This seemed to relieve some of his apprehension, and he accepted the fact that we were going to perform emergency surgery.

During surgery, Dr. Egbert and I

repaired a massive laceration of the liver and a small tear in the duodenum and cleaned all the damaged materials from his abdomen. The post-operative recovery was slow with such an injury, so it wasn't until a week later that the boy was alert enough to ask questions.

The boy was still running a fever and having a reaction from the damaged liver tissue.

We felt that, because his situation was so tenuous, some effort to stabilize his apprehension over his family status might give him a new lease on life and restore his desire to help us during his treatment and recovery. With the help of his wonderful parents, we approached the court that would be responsible for the final adoption proceedings. The judge proved to be an understanding man. He came to the hospital with his court stenographer and finalized the adoption.

Almost immediately the boy's attitude and recovery improved. He became interested in the procedures we were doing and wanted to know when he could eat, get out of bed and ride a bicycle. He eventually recovered completely from his accident.

Twenty years later, I read in the newspaper that an outstanding and internationally known pianist was giving a concert in Indianapolis. The night of the concert I was invited to have dinner at the country club with the parents of the boy injured when an urn fell on him. That boy turned out to be the renowned pianist, but I hadn't recognized his name in the paper because his name change had not been finalized when I operated on him.

As we sat down to dinner, the young man came over to our table, grabbed my hand, stood me up and gave me a bear hug. With tears streaming down our faces, we recalled the episode 20 years ago at the country club.

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19th Century Medicine in Grant County, Land of the Miami Indians

S. GOPAL RAJU, M.D.
Marion

THE PURPOSE of this article is to describe the practice of medicine and surgery in Grant County as early as 1830 and the formation of the Grant County Medical Society, the Indiana State Medical Association and the American Medical Association in the late 1840s.

Early in the history of the country, when the rugged beauty of the native forest was only slightly scarred by the transforming implements of civil industry, Dr. Henry Buchman, a native of England, cast his lot among the adventurous pioneers, erecting his humble cabin on the banks of the Mississinewa River, just above the present site of Marion. He came in 1830, the year before the Grant County government seat was organized, and was the first physician who located in this county. He practiced for a few years, and then moved West, where he later died. He was said to have been

The author practices general surgery in Marion, Ind. Now a naturalized U.S. citizen, he is originally from Anekal, India, where he earned the M.D. degree before coming to the U.S. in 1963. He is a fellow of the International College of Surgeons. Dr. Raju is founder of a four-year college of liberal arts in Anekal-Karnataka, India; it is affiliated with Bangalore University there.

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This plaque, located in front of the Grant County Court House, was erected in 1966 by the Indiana Sesquicentennial Commission.

a student of the late Dr. Ithamer Warner of Richmond, and a reputable and successful physician.

In 1831, or early in 1832, Dr. Joseph Cadwallader came into the county and was the first physician to locate in Marion, the county seat, and the second doctor in the county. He practiced medicine for two or three years in this area before he and his wife died.

A few other physicians who followed Cadwallader were: Ezra Stiles Trask in 1833, John Foster in 1834, James Scott Shively in 1836, William Lomax in 1837, Stephen Ayres in 1838, Verling Kearsey in 1842 and Samuel St. John in 1845. Another doctor, W.F. Spence, came to Jonesboro, a small town near Marion, in 1846; he was

followed by Dr. John A. Meek in 1848. In 1846 Dr. Constantine Lomax joined his brother in Marion. Dr. Samuel S. Horne of the University of Edinburgh came over and settled in Jonesboro in 1848.

In the summer of 1848 the Grant County Medical Society was formed in the office of Doctors William and Constantine Lomax. In 1849, when the California gold rush was starting, a few physicians organized the Indiana State Medical Society in Indianapolis. Two years earlier, the American Medical Association had been organized in Philadelphia.

The third annual meeting of the AMA was held in Cincinnati in May 1850, and the first anniversary of the



19th Century Grant County physicians. Dr. William Lomax appears in the center of the photo at left. (From the *William Lomax, M.D., Historical Atlas of Grant County, Indiana, Illustrated*, Kingman Brothers, pp 29-30, 1877.)

Indiana State Medical Society was observed later that same month. Doctors J.S. Shively and William Lomax were sent by the Grant County Medical Society as delegates to the AMA. They had to travel on horseback to Richmond, where they left their horses and took a coach to Cincinnati. They attended the national meeting, secured the recognition of the Grant County Medical Society, and were admitted as delegates.

Dr. William Lomax frequently attended the meetings of the state society and the national association. The honor of representing their profession and society in this isolated area of America at state and national conventions in distant cities was no trifling burden to those who bore the respon-

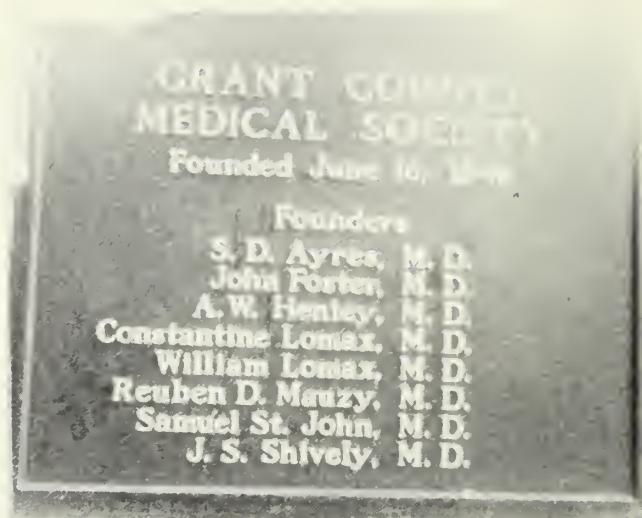
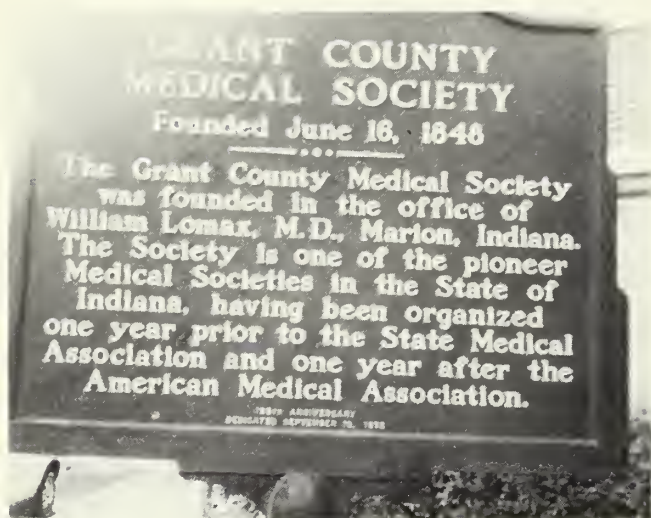
sibility. Without railroads, turnpikes or even safe shelter in many instances, they had to travel to the meetings by long and tedious rides on horseback, stagecoach and canal boats. It required six days travel to attend the three-day conventions, which resulted in lost time; in addition, they defrayed their own expenses in order to faithfully exonerate themselves for the honors conferred upon them.

The members were so sparsely scattered throughout the state and had such opportunities to do as they pleased that it was impossible for the state society to exercise any effective control over their professional conduct. The society had neither the means nor the power of effecting anything more than to report and discuss papers on

scientific subjects and to publish them in its *Transactions*.

In 1875 the constitution of the Grant County Medical Society was adopted as the model for all auxiliary county societies of the state; it was hoped this plan could be faithfully and judiciously persevered in, so there would be little doubt it would soon become a prototype not only of the other state societies, but of the American Medical Association itself. This would secure a most desirable cooperation of the entire profession in "all measures adapted to the relief of the suffering, and to improve the health and protect the lives of the community."

During the same year, the Grant County Medical Society was regarded as the forerunner; nearly 75 physicians



The front and back side of a commemorative plaque in front of Marion General Hospital. The plaque was erected in September 1973 on the occasion of the Grant County Medical Society's 125th anniversary.

from surrounding counties, including Wabash, Howard, Blackford, Miami and Delaware, joined the Grant County group. All of the members' names are listed by Dr. William Lomax in the *Historical Atlas of Grant County, Indiana, Illustrated* (Kingman Brothers, 1877).

Dr. William Lomax (1813-1893)

Dr. William Lomax, one of the founders of the Grant County Medical Society in 1848, also served as the first secretary, with Dr. Samuel St. John as the president. Later, Dr. Lomax served as the seventh president of the Indiana State Medical Society (1855-56). He also was the first doctor to amputate a limb in Marion. His patient was a near relative. Because he was the first doctor to perform such surgery in this part of Indiana, he became noted as a pioneer surgeon in central Indiana.

In response to the first call for troops from Governor Oliver P. Morton, Dr. Lomax enlisted to serve in the Confederate Army in 1861. Other volunteers he enlisted included his own wife. Governor Morton appointed Lomax as the first surgeon of the 12th Regiment. He also served as division and corps surgeon and as chief of the board of

operators in the field and in the hospitals. His wife died while serving in the Army, and he returned to Marion where he later remarried. He died in 1893 at the age of 80.

Medicine Bread

In 1837, Dr. William Lomax lay sick at the house of W. Jones. While recovering, he developed a craving for a type of food unknown to the pioneer, namely, biscuits. Because there was no soda, Mrs. Jones informed the doctor it would be impossible to accommodate his request. He was not to be put off in that way, so, by using his knowledge of therapeutics, he decided that tartaric acid would take the place of soda. Mrs. Jones at first refused to use drugs in cooking but, yielding at last to his urgings, she made the biscuits. It is said, to the credit of both parties, that lighter, better biscuits seldom have been seen in Grant County. Members of the family, especially the children, were frequently heard thereafter begging for some "medicine bread."

Medicine Men—Shamans

Miami Indians were roaming this part of Indiana from the mid-16th century through the 18th century. In those



Me-Shin-Go-Me-Sia, a 19th century Miami Indian Chief.

days medicine men, also called Shamans, were practicing medicine with herbs and dances, and animals were being sacrificed. They were using tobacco smoke to fumigate sick patients, and they were familiar with a variety of herbs, roots and other medicinals. Shamans also were trephining the skull to relieve pressure on the brain, and occasionally they joined together with a religious organization called the Curing Society.

Interestingly, before Dr. Lomax and

his colleagues began practicing in this area, Chief Osandiah, great-grandfather of Me-shin-go-me-sia, traveled nearly 60 days on horseback through the wilderness to Philadelphia in the summer of 1787 to a meeting with George Washington. This was the era when the U.S. Constitution was about to be signed by 39 of the 55 delegates from the 12 colonies on Sept. 17, 1787. (One colony, Rhode Island, did not participate.) George Washington gave Chief Osandiah presents such as boots, a hat, a belt, a gun, and a piece of parchment as an identification for use in future visits with him.

Early Politics: Grant County MDs

Dr. Ezra Trask came to Marion in 1833 from Vermont and practiced medicine only spasmodically. He started a factory for clarifying ginseng for foreign markets. He was a man of means, having taken a literary course with the renowned Daniel Webster, and he also served one term in the Indiana Senate, from 1835 to 1838. Later, he fell victim to intemperance and died in 1839.

Dr. John Foster, one of the organizers of the Grant County Medical Society, came to Marion in 1834 from Highland County, Ohio, and practiced medicine for a few years. He too became a businessman, selling drugs and practicing on a part-time basis. He also was a preacher and politician and served one term as an Indiana senator (1839-1841). He died in 1871.

Dr. James Scott Shively, the fifth physician in Marion, arrived in 1836. He also manifested a propensity for politics and served three terms in the Indiana House of Representatives with alternate years of defeat and success.

Marion and Grant County, Indiana, are in the land of the Miami Indians. Marion is named after General Francis Marion, and Grant County is named after the two young Grant brothers, Samuel and Moses, Army officers who fought and died in this area in their early 20s. Grant County was formed in 1831.

Acknowledgment

The author wishes to thank his of

fice staff for transcribing the article and Mrs. Adeline Mart Nall, a relative of the Lomax brothers, for providing the family history on Dr. William Lomax.

Mrs. Nall, a retired Fairmount High School teacher, takes pride in having taught the legendary actor James Byron Dean.

James Dean (1931-1955), born in Marion, played in the General Electric Theater's "The Dark, Dark Hours" in 1955. This was a television show with Ronald Reagan who, of course, was destined to become President of the United States. Mr. Reagan played a doctor whose sleep was disturbed by the appearance of a "hep cat" killer played by James Dean.

Mrs. Nall also taught two other persons with successful careers, Phil Jones, a CBS Congressional correspondent, and Jim Davis, creator of Garfield, the comic strip cat.

Dean, Jones and Davis were all born in Grant County in the "Land of the Miami Indians."

BUILDING A STRONG STAFF

Jack Valancy's Management Notes for Physicians

JACK VALANCY
Cleveland Heights, Ohio

A STRONG STAFF helps your practice run smoothly; a weak staff impairs it. The kind of staff you have depends on who you hire and your management skills. You can build a strong staff with formal job descriptions, competitive compensation packages, fair personnel policies and procedures, careful recruiting, thorough training, high job performance standards and respect.

Job Descriptions

When physicians find themselves with employees who are not suited for their jobs, it's often because the jobs were not clearly defined in the first place. Lack of definition leads to choosing the wrong candidate, then to misunderstandings about job duties. You can't make a good hiring decision without first creating a job description. Each position in your practice should have a formal five-part written job description, covering:

- **Job title.**
- **Job summary.** Describe the job in one or two sentences.

*With few exceptions, the people who work in physicians' offices are women. The use of feminine pronouns is merely a reflection of this situation.

Copyright by Jack Valancy Consulting. Reprinted with permission. Jack Valancy heads a health care management consulting firm in Cleveland Heights, Ohio.

- **Supervisor and/or supervisory responsibility.** Each employee should have only *one* direct supervisor, even though she may work with several people.

- **Qualifications.** Specify the education, skills and experience needed to perform the job well.

- **Job duties.** Each numbered item is a brief and clear description that begins with a verb, such as *answers, prepares, schedules*. Do not describe procedure.

Compensation: Salary and Benefits

Paying low salaries and minimal benefits is usually false economy. Good employees who can earn significantly more elsewhere leave the practice, while those with mediocre performance remain. This is not to say that you must match the compensation packages offered by other employers, such as hospitals. Employment in your practice may offer important non-economic benefits, such as regular hours and pleasant working conditions. To be competitive, however, you must enable your employees to earn a decent living.

Establish a formal written salary structure for each position based on its relative contribution to the practice. Individual compensation should be determined by performance and tenure, with the emphasis on performance.

Personnel Policies and Procedures

Routine matters like overtime, vacation, sick time and office attire can develop into dilemmas if you don't have a system for handling them. Treating each employee request individually is time-consuming and often futile. No matter what you do, everyone will feel

shortchanged. Prepare fair, written personnel policies and procedures to assure that everyone is subject to the same rules.

Recruiting

It takes time to find the right person for a position, but it's worth spending the time so you don't have to do it all over again in a few months.

- **Advertise.** Recruit a good selection of qualified candidates from which to choose. Run a brief classified ad in your area's major newspaper. Include your telephone number to make it easy for applicants to get in touch with you. While you, or your office manager, will talk with many people who are not qualified for the job, you will also speak with several who are qualified. You'll hear from fewer people, both unqualified and qualified, if you ask applicants to mail their resumes to your office rather than call. Fewer people still will reply to a box number.

You can also make people aware of a job opening in your practice by word of mouth. Hiring friends (or friends of friends) or relatives can be uncomfortable if things don't work out well. Observe two guidelines: 1) Consider only people who are *qualified* for the job. 2) Don't hire anyone you can't fire.

Employment agencies can help you find candidates for a vacancy. They earn their fees when the candidate is hired. Better employment agencies screen candidates against job qualifications carefully. You make the final decision, however, and bear the consequences.

- **Screen.** While you're on the telephone with the applicant, ask about her qualifications. If you determine

that she meets them, ask her to send a resume. Review her resume, and if she's still a promising candidate, schedule an interview. If an applicant does not meet the job's qualifications, tell her so tactfully.

"It Takes Time to Find the Right Person for a Position, But It's Worth Spending the Time"

- **Interview.** Your two objectives are to learn more about the candidate's qualifications and to educate her about the job. Allow at least a half hour for the interview. Conduct it in a private office and permit no interruptions. Let the applicant talk, but don't allow her to monopolize the interview. Ask her about her employment history with open-ended questions, such as:

"Tell me about your current and previous jobs."

"What did you like most and least about them?"

"Why are you interested in this job?"

"If I were to talk to the people you've worked for, what would they be likely to say about you?"

Give the candidate your full attention. Observe her manner. Would you feel comfortable working with her? Having her represent your practice?

If you still think she is a strong candidate, give her a copy of the job description and review it together, point by point. If, as you review the job duties, you question the candidate's ability, ask, *"Do you think you would have any trouble with this?"* Review the compensation package and the practice's personnel policies and procedures, too. As you discuss each point, ask if it is acceptable to her.

Finally, ask, *"If you were offered this job, is there any reason you could not*

perform it as described?" This is the time for the applicant to inform you of any special considerations.

- **Testing.** You can test an applicant's skills by asking her to complete sample tasks you have prepared in advance. Tests should simulate actual working conditions as much as possible.

- **Check references.** Ask the candidate to provide the names of her references in writing, and obtain permission to contact them. If possible, speak with the applicant's most recent immediate supervisor. Verify the dates of employment, position, and job duties, and ask about her job performance and how well she got along with others. Determine why she left her previous job and if the employer would hire her again. Finally, ask, *"Is there anything else I should know that would help me with my decision?"*

Training

Good training can turn an underachiever into a staff member who makes a valuable contribution to the practice. Realizing an employee's potential should not be left to chance.

Outline a step-by-step training program for each new employee. Assign the responsibility for training her to an experienced employee. On the first day:

- Introduce her to the physicians and her coworkers.

- Review her job description, compensation, and the personnel policies and procedures manual.

- Initiate her personnel folder and complete all necessary paperwork.

- Let her observe in the area where she will be working.

- Give her a small assignment so she will feel that she has accomplished something on her first day.

Written procedures are excellent training materials. Provide each employee with her own copy. Perform training during a quiet time in the practice. Go slowly. Teach one procedure, or portion of a procedure, at a time.

Continuing education will keep your

employees' skills sharp. Books, periodicals, self-study courses and seminars can help improve performance. The practice should pay for all training costs.

Job Performance Evaluation

Monitor each employee's job performance continuously and conduct a formal, written job performance evaluation with each employee every year. Reward good performance. Do not tolerate poor performance.

"Realizing an Employee's Potential Should Not Be Left to Chance"

Small allowances to capitalize on an individual's strengths are acceptable, but making major compromises to avoid an individual's weaknesses can undermine the practice. Try to help the employee improve her performance. However, if she is unable or unwilling to carry out all of her job duties well, you must find someone who can. Transfer or discharge the poor performer.

Treat People Well

Contrary to popular belief, money does not motivate people to do a good job. The greatest motivators are:

- Achievement
- Recognition
- The work itself
- Responsibility
- Advancement

Tell each person on your staff that her contribution is important to the practice. Express your appreciation for good individual and team performance. Solicit suggestions for improvements.

Treating people with basic human respect costs nothing and pays big dividends.

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A JOURNAL FOR CARDIOLOGISTS AND PHYSICIANS IN INTERNAL MEDICINE

VOL. 5 NO. 1 • JANUARY 1988

Effect of Medical versus Surgical Therapy for Coronary Disease / PETER PEDUZZI, PhD, et al

Electrophysiological Testing and Nonsustained Ventricular Tachycardia / PETER R. KOWEY, MD, et al

Residual Coronary Artery Stenosis after Thrombolytic Therapy / LOWELL F. SAILER, MD, et al

Assessment of Aortic Regurgitation by Doppler Ultrasound / PAUL A. GRAYBURN, MD, et al

Emboic Risk Due to Left Ventricular Thrombi / JOHN R. STRATTON, MD

Hemodynamic Effects of Diltiazem in Chronic Heart Failure / DANIEL I. KULICK, MD, et al

Cardiovascular Reserve in Idiopathic Dilated Cardiomyopathy / RICHARD D. LAHAM, MD, et al

Overview • Coronary Angioplasty: Evolving Applications / GEORGE W. VETROVEC, MD

*Journals reviewed include: *Circulation*, *American Heart Journal*, *Journal of the American College of Cardiology*, *British Heart Journal*, *Chest*, *The American Journal of Cardiology*, *The New England Journal of Medicine*, *Annals of Internal Medicine*, *American Journal of Medicine*, and *The Journal of the American Medical Association*.

ISMA LEADERSHIP CONFERENCE



Dr. Paul F. Muller, Medical Director of Peerview, speaks during an afternoon panel discussion on peer review and licensing. Other panel members were (from left) Dr. John D. Miller, president of the Indiana Medical Licensing Board; William Keown, executive director of the Indiana Health Professions Bureau; Mike Minglin, deputy attorney general, Indiana Attorney General's Office; and Ronald L. Dyer, ISMA Legal Counsel.



ISMA field services staff, Bob Sullivan, Janna Kosinski and Richard Ryan (left to right), talk with Dr. Mark A. Ballard, president of the LaPorte County Medical Society, at the registration desk at the Lincoln Hotel and University Conference Center in Indianapolis.



Charles Rund (left), president of Charlton Research of San Francisco and a speaker at the morning general session, talks with Dr. John MacDougall, ISMA President, and Richard R. King, ISMA Executive Director, during the continental breakfast.

Photos by TINA SIMS



Earl W. Williams (right), professional account representative for Lincoln National Life Insurance Company, talks with Dr. Lloyd S. Terry of Danville.



Looking at the agenda are Dr. John D. Miller (left), a member of a panel on peer review, and Dr. Michael Mellinger, chairman of the ISMA Board of Trustees.



Dr. Glenn J. Bingle, Dr. Charles O. McCormick III and Dr. David J. Need (left to right) were among the 71 physicians who attended the April 23 conference. ISMA is considering making the midyear leadership conference an annual event. Most participants who completed evaluation forms gave the conference high marks.



Dr. James Sammons, executive vice-president of the American Medical Association, addresses conference participants during the noon luncheon.

Sex and the Single Migraine

DAVID HOPKINS, M.D.
Seattle, Wash.

LAST MONTH when I was browsing through one of the myriad of "throw away" medical newspapers that flood our office with relentless success, an intriguing little article caught my eye. It was a report on a research group in Quebec studying migraine headaches.

The researchers found that initiating sexual intercourse during the prodromal phase of a migraine headache (aura sex) could abort the headache in over 80 percent of the subjects. It may be superfluous to add that one of the participants should be the person with the migraine.

The report was even more specific in stating that the endeavor must be carried to fruition; just entering the fray was not sufficient to stave off the headache.

One might well ask what's so earth-shaking about these findings. It would seem to be, as we say in Minnesota, "no big deal."

Incidentally, I have come across an excellent new book by Howard Mohr entitled "How To Talk Minnesotan." For example, here's an excerpt from the book demonstrating how to use the phrase "you bet" which is one of the show horses of Minnesotan conversation:

"If you fly in, your first chance to try Minnesotan will likely occur at the airport:

—'We found your suitcase. It got caught in the conveyor belt. Some of

your underwear fell out and was shredded by the pulley. Otherwise, it's okay. We taped the handle back on. It should last you.'

—'Oh, thanks.'

—'You bet. But your dog is another matter. We think he's on the plane to Kansas City, but no problem, we'll find him.'

—'I appreciate that.'

—'You bet.'"

This book is a must for anyone who is interested in linguistics or is planning a trip to Minnesota.

But I digress. If one pauses to reflect, as I did, upon the migraine study, certain questions, conclusions and ramifications become apparent. Most monumental is the realization that in one fell swoop the study has swept away one of womankind's time honored defenses against the predatory male. "Not tonight, dear, I have a headache" suddenly becomes a call for swift therapeutic action which only the most callous male would ignore.

A little more reflection raises some interesting questions. First of all, how did they come upon this rather novel treatment modality? Was it serendipity? Perhaps the chief researcher and his senior research assistant (with whom he had a longstanding monogamous relationship) were engaged in their own "animal research" in his office and perhaps in the midst of this she exclaimed, "Mon Dieu, the flashing lights, they have stopped and the headache, she is gone!" (they are French in Quebec) and the chief, with his analytical background, sensed the cause and effect relationship.

One also wonders if this was a double blind study and, if so, what was used as a placebo.

Finally in considering the practical application of the study, the following scenario comes to mind: a well-dressed,

middle-aged, somewhat depressed-looking woman is sitting in her doctor's office.

Mrs. Jones: "Doctor, my headaches are no better."

Doctor: "Mrs. Jones, we have tried every medicine I know to control your headaches, and none have helped. There is one new therapy that we might try."

Mrs. Jones:

"What is that?"

Doctor: "Intercourse."

Mrs. Jones: (standing up quickly) "Doctor, I'm shocked. I read that some doctors made these kinds of suggestions but I thought they were always psychiatrists."

Doctor: "No, Mrs. Jones, I meant you and Harold. When I said 'we' I was using the collaborative 'we' as in 'did we take our medicine today.'"

The doctor then explains the therapy to the woman.

Two weeks later, the doctor's office:
Nurse: "Doctor, Mr. Jones is here to see you."

Mr. Jones: "Doc, you've got to help me. That technique works, but I'm having to stop the headaches once or twice a day, and I'm exhausted. I've lost 15 pounds and haven't been to work in a week and a half. You've got to put her back on Cafergot or at least talk to her."

Doctor: "You bet."

Three weeks later, the doctor's office:

Doctor: "How are the headaches Mrs. Jones?"

Mrs. Jones: "The headaches are gone. Since you talked with us, Harold and I have had a meeting of the minds. I'm taking an occasional cold shower, and Harold is eating oysters and mega-vitamins. In fact, doctor, I must confess (smiling slyly), the last two times—I lied. I didn't even feel a headache coming on."

Reprinted with permission from the February 1988 issue of "WSMA Reports," the monthly newsletter of the Washington State Medical Association. The author is editor of the publication.



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Hey Washington, Is Anyone Listening?

JOHN W. WALLS

President

Indiana Chamber of Commerce

IN HIS BOOK, "Job Creation in America," David Birch makes some interesting observations about the restructuring of American business. His most dramatic finding is this: In America today, smaller firms—companies with fewer than 20 employees—create 98% of all net new jobs.

Birch's seven years of exhaustive research, using a database of 5.6 million firms, both large and small, draw one clear conclusion. Small businesses, not large corporations, are the major forces driving our growing economy.

Unfortunately, it seems that many of our lawmakers in Congress, and in the Indiana General Assembly for that matter, don't realize what a potent and vital force small business is to this country's future. An example includes proposals in Congress for mandated health insurance and mandated parental leave benefits. In fact, government mandated benefits were identified as the number two concern during the 1986 White House Conference on Small Business.

Mandated Health Insurance

S. 1265, sponsored by Senators Edward Kennedy (D-Mass.) and Lowell Weicker (R-Conn.), and a companion bill, H.R. 2508, introduced by Representative Henry Waxman (D-Calif.), apply to all employers other than the federal government. As pro-

posed, employees working at least 17.5 hours a week are considered full-time and would be entitled to employer-provided health insurance benefits. These benefits include inpatient and outpatient hospital care, physician services, diagnostic and screening tests, prenatal and well-baby care, and attention to mental health needs.

A study conducted by Robert R. Nathan Associates, Inc. for the National Foundation for the Study of Employment Policy estimated that the employers' costs of mandated health insurance would be between \$32.8 billion and \$38.8 billion during the first year alone. This would add about 3.5% to private employers' average hourly labor compensation costs. Results would include higher prices for goods and services and, in many cases, failed businesses.

The study also finds that the increases in labor costs created by mandated health benefits would lead to lower employment, particularly in the lowest paid occupations. The brunt of this burden would fall on small companies, primarily service and retail businesses. Is this a sane course to follow in light of Mr. Birch's claim about the strength and importance of small business?

Mandated Parental Leave

The other shoe drops with a proposal by Representative William Clay (D-Mo.), to mandate parental leave. H.R. 925 applies to firms with 35 or more employees, and mandates the following: employees (both fathers or mothers) would receive 10 weeks of unpaid leave for the birth, adoption or serious illness of a child; 10 weeks of unpaid leave for the care of dependent parents; and 15 weeks of unpaid leave for personal disability.

You can already hear the cash

register ringing! The employers' five-year annual average insurance cost resulting from this legislation would increase an estimated \$186 million to \$573 million *per year*. During the first year of enactment, the Nathan Study estimates that up to 867,000 employees would take leave to care for a newborn; 63,000 to care for a child's illness; 185,000 to care for an ill parent; and 639,000 because of a personal illness.

These numbers and their respective costs are staggering! The intent of these programs may be good, but the enormous cost to employers (especially small businesses), and the loss of flexibility for both employees and employers to design their own benefits program, certainly counters any potential gain there might be. Public sector costs for administering and policing these mandates would, of course, add significantly to tax supported requirements.

Another potential loss could be reductions in local, state and federal revenues if the private sector costs lead to decline in economic activity. If unemployment were to increase, as suggested by the Nathan study, income tax revenues would fall and welfare expenditures would rise.

In a survey conducted by the National Small Business United organization and Touche Ross, NSBU members were asked how mandated parental leave would affect their hiring practices. More than one of five said they would turn to stricter pre-hiring screening; 8% would reduce their workforce; nearly 4% would hire only part-time employees; 15.7% would hire fewer females; and 5% would go out of business.

Shades of Pauline's perils! Small business is tied to the tracks and can see the train coming. *Hey Washington, is anyone listening?!*

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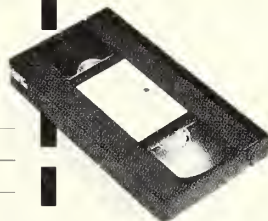
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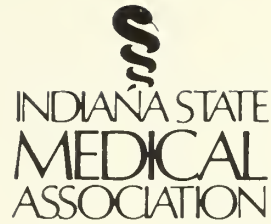
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DIGEST OF HEALTH & MEDICAL LAWS

1988 INDIANA GENERAL ASSEMBLY

DIGEST OF HEALTH AND MEDICAL LAWS 1988 INDIANA GENERAL ASSEMBLY

The 1988 "short" session of the Indiana General Assembly was a fast and furious session. Over 100 proposals of interest to the physicians in Indiana were introduced in this session. Less than half of that number were successful in their passage into law.

These new Indiana laws from the health/medical area have been summarized for you in this "1988 DIGEST OF HEALTH AND MEDICAL LAWS." The new laws have been listed under several subject headings for easy reference.

If you have any questions, or would like more information on a particular law, please contact the Department of Government Relations of the Indiana State Medical Association at 1-800-382-1721 or 317/925-7545.

This "1988 DIGEST OF HEALTH AND MEDICAL LAWS" was prepared by the ISMA's Department of Government Relations: Julie Newland, Director; Mike Abrams, Legislative Assistant; and Duane Schaefer, Legislative Assistant.

Children and Child Care

- HEA 1155 -- permits the department of human services to provide grants to preschool child care programs;
 - establishes guidelines for determining which day care centers receive a grant;
 - requires the department of public welfare to adopt rules concerning the licensing and inspection of day care centers, foster homes, day care homes, and child care institutions;
 - requires the state fire marshal to inspect each day care ministry at least annually.
- This Act takes effect July 1, 1988.

- SEA 18 -- regulates day care homes, foster homes, and other children's facilities;
 - defines day care homes and foster homes;
 - allows the department of public welfare to grant a variance or waiver of any of its rules governing foster homes, day care homes, children's homes, day care centers, child caring institutions, or child placing agencies;
 - states that the privileged communication between a health care provider and that health care provider's patient is not grounds for failure to report a child abuse case or for excluding evidence in any judicial proceeding concerning child abuse.
- This Act takes effect July 1, 1988.

- SEA 416 -- regulates the reporting of missing children;
 - establishes guidelines for the Indiana Clearinghouse for Information on Missing Children and the vital statistics division of the state board of health to follow when children less than 13 years of age are reported missing;
 - provides that each public school shall and each private school may require a student who initially enrolls in the school to provide the name and address of the school the student last attended and reliable proof of the student's date of birth;
 - requires a law enforcement agency to begin an investigation within 24 hours after receiving notification that a child is missing.
- This Act takes effect July 1, 1988.

Communicable Diseases/Public Health

- SEA 9 -- requires the state board of health to consider a political subdivision's population size, reported incidence of HIV, and availability of resources in determining the allocation of funds from the state's general fund; requires physicians, hospitals, and medical laboratories to report to the local or state health officer each case of HIV (including confirmed cases of AIDS) in conformance with rules of the state board of health. The report must indicate, if known, whether the individual had undergone any blood transfusions, where the transfusions took place, and the blood center that furnished the blood. (Exemptions would be extended for research projects and anonymous test sites); provides that an HIV test may not be conducted without the person's consent. The consent is to be documented by the physician ordering the test or the physician's authorized representative. The HIV test may be conducted without consent: if ordered by a physician who has obtained a health care consent or an implied consent under emergency circumstances and the test is medically necessary to diagnose or treat the patient's condition, or if under a serious and present health threat to others, or if the test is done on blood collected anonymously as part of an epidemiologic survey;
- provides criteria under which the state board of health or its agent may enter upon private property to inspect for violations of the communicable disease statutes and commence civil actions;
- establishes definitions for "infectious waste," "effective treatment," "pathological wastes," and "secure area" for purposes of proper disposal and treatment of infectious wastes;
- provides that before infectious waste is placed in an area that is not secure and before the waste is sent for final disposal all infectious waste must be effectively treated on site, or transported off site for effective treatment according to rules of the state board of health. The rules shall be adopted after consultation with an advisory committee composed of representatives of entities that handle infectious wastes and after considering existing state and federal guidelines governing this area;
- establishes procedures by which the health officer may investigate or intervene including detention when a person who is a carrier of a dangerous communicable disease engages repeatedly in behavior that has been demonstrated epidemiologically to transmit the

disease;

- requires the state board of health to tabulate all case reports of tuberculosis and other dangerous communicable diseases;

- outlines provisions for the cost of care or treatment for the carrier of the dangerous communicable disease if ordered by a court of law;

- provides that a person with a communicable or infectious disease shall not work in a food establishment in any capacity in which epidemiological evidence indicates the person may spread the disease;

- requires a facility receiving a patient to notify the medical director of a facility employing an emergency medical care provider or their designated physician when the provider has been exposed to blood or bodily fluids from a person with a dangerous communicable disease where transmission could result. The physician or medical director receiving this information is to provide treatment or counseling to the emergency medical care provider;

- requires blood centers, plasma centers, and other facilities where blood or blood products are donated or sold to comply with rules of the state board of health on HIV screening tests of donor's blood;

- requires blood centers to attempt to notify those donors who have a positive confirmatory test for HIV antibody;

- requires health care providers that administer blood transfusions to keep a record of the blood center that furnished the blood;

- provides that a blood donor may specify that their blood must be used for that donor or another person so specified. This blood must be tested for HIV;

- requires blood donors to provide to blood centers their name, address, and date of birth. The blood center may ask the donor for their social security number;

- requires employers to provide training and equipment for the use of universal precautions for persons whose work brings them in contact with body fluids. This training is to be provided by September 1, 1988, for employees hired before May 15, 1988;

- requires that school curriculum on AIDS be integrated with instruction on other dangerous communicable diseases;

- requires the department of education in consultation with the state board of health to develop AIDS educational materials;

- requires information on AIDS to be provided to school employees;

- requires marriage license applicants to receive written or videotaped information on risk factors for dangerous communicable diseases that are sexually transmitted including HIV. The marriage license applicants also are to receive information on HIV voluntary test sites, including through the applicant's private physician;

- allows the knowledge that a convicted person is a carrier of HIV to be used as an aggravating circumstance in sentencing of the person for certain sex and drug related crimes where there is an epidemiologically demonstrated risk of transmission of the HIV;

- adds HIV testing as a condition for probation for certain sex and drug related crimes;

- makes the reckless, knowing, or intentional transfer of blood containing HIV antibodies a Class C felony. If the virus is transmitted, it is a Class A felony;

- requires the state board of health semiannually to provide information on AIDS and related diseases to all physicians and dentists. This information will assist the physician or dentist in instructing employees on the universal precautions, and the appropriate means of disposing of infectious wastes;

- requires the state board of health to collect information from physicians and dentists concerning issues related to the diagnosis and treatment of AIDS;

- requires the state board of health to provide information to the citizens of Indiana on AIDS. The board is to evaluate the methods for distributing this information.

The sections of this Act dealing with the information to be distributed to physicians and dentists and Indiana's citizens as well as the section on the training of employees in the universal precautions take effect March 4, 1988. The remaining sections take effect July 1, 1988.

Drugs

- SEA 415 -- makes the prescribing, distributing, or use of anabolic steroids without a medical necessity a Class D felony.

This Act takes effect July 1, 1988.

Drunk Driving

- SEA 148 -- amends the Indiana motor vehicle statute to provide that a physician or a person under the direction of a physician shall obtain a blood, urine, or other bodily sample if a law enforcement officer requests the sample be obtained and if the law enforcement officer has certified in writing that probable cause exists to find that the person from whom the sample is to be obtained has violated Indiana law regarding driving while under the influence of alcohol or controlled substances and has been involved in an accident that resulted in the serious bodily injury or death of another;

- provides that the sample is to be obtained if the person has been transported to a hospital or other medical facility for treatment. The sample must be requested no more than 3 hours from the time of the accident;

- provides that no more than reasonable force may be used to obtain the sample. If the patient refuses to give consent and resists the taking of the sample, the law enforcement officer may use reasonable force to assist the individual authorized to obtain the sample (the sample shall be taken in a medically acceptable manner);

- extends civil and criminal immunity to physicians who carry out these provisions in good faith;

- provides that if the person from whom the sample is to be obtained has not been injured, the law enforcement officer may transport the person to a place other than a hospital where the sample may be obtained by a physician, registered nurse, or licensed practical nurse;

- makes other changes to the law dealing with habitual violators under the Indiana motor vehicle statute. The section of this Act dealing with obtaining samples take effect March 5, 1988. The other sections of the Act take effect July 1, 1988.

Emergency Services

- HEA 1062 -- allows the fiscal body of a county to establish a county-wide enhanced emergency telephone system;

- allows the fiscal body to impose a monthly fee, subject to limitations, in order to pay for the enhanced emergency telephone system;

- specifies the use for the monthly fee;

- expands the definition of emergency medical services to include extrication and rescue services;

- provides that the Indiana Emergency Medical Services Commission may not withhold approval of a motor vehicle because the vehicle is not affiliated with a hospital, law enforcement agency, or fire department;

- provides that the Indiana Emergency Medical Services Commission may not withhold certification from a person providing emergency medical services, which include extrication and rescue services, because the person is not affiliated with a hospital, law enforcement agency or fire department.

The sections of this Act dealing with the enhanced emergency telephone system take effect June 1, 1988. The remaining sections of the Act take effect July 1, 1988.

Health Records

- HEA 1055 -- adds hospitals and health facilities to the definition of "provider" under the Indiana health records law;

- requires a provider to maintain a health record for at least seven years (the former law had been for 8 years);

- requires a provider to maintain a patient's x-ray film for at least five years. At the time the x-ray is taken, the provider is to inform the patient in writing or through the posting of a sign in the x-ray exam area that the x-ray film will be kept on file 5 years and that the patient may obtain a copy of the x-ray film within that 5 year period at cost;

- requires a provider to maintain a patient's mammogram for at least 5 years;

- provides that when a mammogram is taken, the provider shall inform the patient in writing that the mammogram will be kept on file for 5 years and that at the end of that 5 year period, the patient will be given 30 days to claim the mammogram at no charge to the patient. If the patient would like a copy of the mammogram before the 5 year period, the patient may obtain a copy of the mammogram at cost;

- extends civil immunity to a provider for failing to maintain the x-ray if the destruction was not done in bad faith.

This Act takes effect July 1, 1988.

Home Health Care

- HEA 1004 -- deletes homemaking services from the definition of home health services;
-- requires the state board of health, instead of the health facilities council, to adopt rules governing home health agencies;
-- provides that a representative of a home health agency and the director of the state commission on the aging and aged be replaced on the Indiana Health Facilities Council with a nurse-educator of a practical nurse program and the commissioner of the department of human services.

This Act takes effect July 1, 1988.

- HEA 1386 -- appropriates \$5 million from the general fund, in addition to the \$750,000 appropriated during the 1987 session, for home health care services for Fiscal Year 1988-89.

-- requires the Department of Human Services to analyze the need for and the cost of home care services, and to report findings to the budget committee and the General Assembly before September 1, 1988.

This Act takes effect July 1, 1988.

Insurance

- HEA 1276 -- requires a city, town, township, or county to provide group health insurance for each firefighter, sheriff, county police officer, and municipal police officer who is receiving disability benefits;
-- requires the state to provide each retired member of the general assembly who meets certain requirements a group health insurance program that is equal to that offered active state employees.

This Act takes effect July 1, 1988.

- SEA 201 -- amends the Indiana insurance statutes to provide that an individual's coverage under an individual or group health insurance policy cannot be unilaterally cancelled between policy renewal dates solely because of the individual's medical or physical condition;

-- prohibits the use of a policy form or rider that would permit a cancellation of coverage solely because of the individual's medical or physical condition.

This Act takes effect July 1, 1988.

- SEA 212 -- allows ambulance services to provide

ambulance services to paid members if the membership benefits last one year or less, without a certificate of authority from the insurance commissioner. This Act takes effect March 5, 1988.

- SEA 223 -- sets forth minimum requirements for risk retention groups;

-- regulates the financial practices of risk retention groups.

This Act takes effect April 1, 1988.

Licensing

- HEA 1197 -- increases the penalty for practicing dentistry without a license from a Class B misdemeanor to a Class D felony;

-- allows licensed dental hygienists to provide dental hygiene instruction without supervision and without restriction on location;

-- adds to the definition of "practicing dental hygiene" the practice of treating gum disease and using x-rays and impressions for treatment.

This Act takes effect July 1, 1988.

- SEA 2 -- establishes a uniform disciplinary act for those practitioners under the Health Professions Standard of Practice;

-- allows the governing board to assess a fine against a practitioner in an amount not to exceed \$1,000 per occurrence for violation of their licensing act;

-- allows a governing board or committee to require applicants for licensure, certification, or registration by examination, endorsement, or reciprocity to pass a test on the state or federal statutes, state rules, and federal regulations that the board or committee determines by rule to be relevant to the practice of that regulated profession;

-- allows the Indiana Medical Licensing Board to refuse to issue a license, issue an unlimited license, or issue a probationary license to an applicant for licensure if the board determines during the application process that the applicant committed an act that would have subjected him to disciplinary action under Indiana statutes;

-- establishes procedures for the issuance of a probationary license;

-- establishes conditions under which the Indiana Medical Licensing Board may issue or not issue a license for an applicant who is applying for a new license after the license has been revoked for 7 years. This Act takes effect March 3, 1988.

Mental Health

- HEA 1174 -- increases the alzheimer's task force by one member;
-- the additional member must have a family member who is or was afflicted with the disease;
-- requires the state board of health to establish a state health data center to collect and analyze information regarding the health status of Indiana residents.
This Act takes effect July 1, 1988.

- SEA 51 -- current law requires responsible parties to pay maintenance charges when a person is being treated in a state psychiatric hospital. The department of mental health may review a person's ability to pay and set a payment standard based on that individual's unique circumstance. The department of mental health may agree to accept payment at a lesser rate after considering the possibility of reimbursement from the responsible party's estate. This agreement is subject to cancellation or modification at any time. SEA 51 establishes two conditions, at least one of which must exist before modification or cancellation of an agreement: 1) material facts were omitted or misrepresented, or; 2) substantial change in the responsible party's financial situation occurred within five years after discharge;
-- re-establishes the Indiana Commission on Autism, which studies the service delivery system available for persons with autism and their families.
The commission is set to expire on December 1, 1989.
The section of this Act that concerns maintenance payment takes effect July 1, 1988. The section that re-establishes the Commission on Autism takes effect December 1, 1989

- SEA 230 -- transfers about six acres of Evansville State Hospital Land;
-- provides four acres to the Southwestern Indiana Mental Health Center for the purpose of promoting mental health or treating mental illness;
-- provides two acres to Associated Patient Services Industries to be used for vocational rehabilitation workshops.
This Act takes effect March 5, 1988.

- SEA 339 -- prohibits a zoning ordinance from excluding a residential facility for the mentally ill from a residential area solely because it is a business or be-

cause the residents are unrelated. An ordinance may exclude a residential facility for the mentally ill from a residential area if the facility will be within 3000 feet of another residential facility for the mentally ill. This Act takes effect April 1, 1988.

- SEA 384 -- requires the department of mental health to study the problem of homeless mentally ill persons and report to the general assembly before November 1, 1988.
This Act takes effect March 5, 1988.

Peer Review

- HEA 1196 -- includes PPOs and prepaid health care delivery plans under the provisions of Indiana's peer review statute;
-- extends the provisions for confidentiality and immunity for the good faith peer review activities of the HMOs or PPOs peer review committee;
-- provides that evidence of any financial incentive offered to or withheld from a HMO or PPO provider is subject to discovery under Indiana Trial Rules, unless specifically protected by statute;
-- provides that the threat of physical violence or other means of harm may be reported to a physician or psychologist who is designated by the employer of a mental health service provider as an individual who has the responsibility to warn under Indiana's "duty to warn" statute.
The section of the Act dealing with duty to warn takes effect July 1, 1988.
The sections of the Act dealing with peer review take effect March 3, 1988.

Professional Liability

- HEA 1037 -- provides that prejudgement interest may be assessed in a civil action arising out of tortious conduct;
-- excludes claims for prejudgement interest filed against the Patient's Compensation Fund;
-- provides that the prejudgement interest is to be computed for a period preceding the date the court returns a verdict or finding in the proceeding. The rate of prejudgement interest is to be set by the court (not less than 6% and not more than 10%) for a period not to exceed 48 months;
-- provides that the court may award prejudgement interest as part of the judgement;

-- provides that prejudgement interest begins to accrue on the latter of:

15 months after the cause of action accrued or 6 months after the claim is filed in court. For those cases filed under the Indiana Medical Malpractice Act, the prejudgement interest would begin to accrue 180 days after a medical review panel is formed;

-- provides that prejudgement interest would not be assessed in those cases: during the period when the party petitioning for prejudgement interest delays the proceedings, or when the party against whom the claim is filed makes an offer of settlement within 9 months after the claim is filed specifying that payment is to be made within 60 days after the offer is accepted and the amount of the offer is at least $\frac{2}{3}$ of the amount of the judgement award or within one year after the claim is filed, the claimant fails to make a settlement offer and the terms of the offer fail to provide for payment within 60 days after the offer is accepted or the amount of the offer exceeds $1\frac{1}{3}$ of the amount of the judgement awarded;

-- amends Indiana law dealing with restitution orders. The section of the Act dealing with prejudgement interest applies to actions accruing after July 1, 1988.

- HEA 1070 -- provides that if a new medical review panelist joins the panel more than 90 days into the process, the panel has 90 days from the date of the new appointment to render its decision;

-- provides that if the medical review panel does not render its decision within the statutory time frame, they must report the reasons for the delay to the insurance commissioner;

-- allows the commissioner of the department of insurance to remove a medical review panel chairman who is not fulfilling his duties;

-- allows a medical review panel chairman to remove a panel member who is not fulfilling his duties;

-- increases the maximum amount of compensation a medical review panel member who is a health care provider may receive from \$250 to \$350;

-- increases compensation to the panel review chairman from \$200 per diem to \$250 per diem. Increases the maximum amount a panel chairman may be reimbursed from \$1000 to \$1250;

-- requires organizers of preferred provider plans to file a statement with the insurance commissioner that includes the names and addresses of participating providers, the counties in which the plan provides ser-

vices, and the number of insured persons in the plan. This Act takes effect July 1, 1988.

- HEA 1246 -- requires the medical malpractice surcharge calculation to provide comparable rates for insured and self-insured hospitals.

This Act takes effect March 2, 1988.

Public Welfare/Medicaid

- SEA 202 -- encourages prenatal care by extending Medicaid eligibility to pregnant women with family incomes as high as 50% of the federal poverty level. Women are eligible for the duration of the pregnancy plus sixty days;

-- extends Medicaid eligibility to children up to age one whose family income does not exceed 50% of the federal poverty level;

-- current law makes a person eligible for Medicaid only if they are eligible for Aid to Families with Dependent Children. The AFDC eligibility standard is approximately 37% of the federal poverty level;

-- establishes a 45-day "presumptive period of eligibility" during which time a pregnant woman must be presumed eligible for Medicaid, pending a final determination. The presumptive period of eligibility is only 14 days if the woman does not apply for assistance;

-- funds the expansion of Medicaid eligibility for prenatal care by transferring \$200,000 from the Women, Infants, and Children (WIC) program, \$200,000 from Maternal and Child Health Services, \$150,000 from the Hospital Care for the Indigent (HCI) program, and \$1,350,000 from the Crippled Children's Program; The section of this Act that concerns the presumptive period of eligibility takes effect October 1, 1988.

The remainder of the Act takes effect on July 1, 1988.

Surrogate Motherhood

- SEA 98 -- prohibits the enforcement of any term of a surrogate agreement whereby the surrogate is required to: provide a gamete to conceive a child, become pregnant, consent to undergo an abortion, undergo medical or psychological treatment or examination, use a substance or engage in activity only in accordance with the demands of another person, waive parental rights or duties to a child, terminate the care or custody of a child, or consent to a stepparent adoption;

- voids any surrogate agreements formed after March 14, 1988;
- provides that a court may not base a decision concerning the best interests of a child in any civil action solely on evidence that a surrogate and any other person entered into a surrogate agreement unless the agreement can be proved to have been obtained under fraud, duress, or misrepresentation;
- establishes an interim study committee to revise the laws governing adoption, paternity, custody, parental rights, and to address the issues raised by aided conception. The committee also is to establish procedures and policies to protect the children borne by a surrogate and balance the interests of intended biological parents and surrogates. The committee is to provide a report by November 1, 1988. This Act takes effect March 15, 1988.

Tobacco

- SEA 235 -- allows the state board of health to allocate local health maintenance funds that have not been applied for to appropriate programs undertaken by two or more counties;
- allows local legislative bodies to adopt ordinances allowing the local board of health to charge for certain services (immunization, laboratory services, prenatal clinics, other) on a sliding fee scale based on income;
- prohibits the free distribution of tobacco to minors (persons younger than eighteen) when the distribution is intended to promote the product;
- establishes a penalty (Class C infraction) for minors who purchase or accept tobacco for personal use. The sections of this Act that concern health maintenance funds and fees for services take effect January 1, 1989. The sections of this Act that concern tobacco take effect July 1, 1988.

Workmen's Compensation

- HEA 1069 -- allows the medical report from a physician who examines an injured employee to be submitted by either party as evidence of the physician's testimony at a hearing before the worker's compensation board;

- requires the physician's report to include certain information;
- increases from 10 to 30 the number of days before a hearing that the physician's report must be submitted.

This Act takes effect July 1, 1988.

- HEA 1152 -- brings volunteer firefighters or emergency medical technicians working in a volunteer capacity for a volunteer fire company under the medical benefits portion of the workmen's compensation and occupational diseases laws.

This Act takes effect July 1, 1988.

- SEA 402 -- increases from \$500 to \$4000 the maximum amount that may be paid by the state for the funeral expenses of a member of the national guard who dies in service;

- makes temporary total disability compensation subject to child support income withholding;

- requires surviving spouses to be notified that, if they refuse to allow an autopsy ordered by the workers compensation board, their claim for compensation on account of the death will be suspended during the period of refusal;

- increases from \$125/week to \$166/week the compensation allowed, in addition to temporary total disability benefits, for a given schedule of injuries and occupational diseases, occurring after July 1, 1978 and before July 1, 1989. It increases to \$183 on July 1, 1989 and to \$200 on July 1, 1990;

- increases from \$2000 to \$4000 the maximum amount payable for burial expenses of an employee whose death is caused by a work-related injury;

- increases from \$267 to \$384 the maximum that can be considered an average weekly wage when computing compensation for temporary total disability, temporary partial disability, and total permanent disability for injuries occurring after July 1, 1988. For injuries occurring after July 1, 1989, the figure is increased to \$411 and it is increased to \$441 for injuries occurring after July 1, 1990;

- increases from \$95,000 to \$128,000 the maximum compensation, exclusive of medical benefits, that may be paid under the worker's compensation law for injuries occurring after July 1, 1988. The amount is increased to \$137,000 for injuries occurring after July 1, 1989, and to \$147,000 for injuries occurring after July 1, 1990.

This Act takes effect July 1, 1988.

Other

- HEA 1017 -- concerns the release of adoption records;

- distinguishes between and regulates the release of identifying and nonidentifying information;

- states who may transmit identifying and nonidentifying information for inclusion with the adoption history and when that information can be released.

This Act takes effect July 1, 1988.

- HEA 1067 -- requires the state director of special education to make rules, subject to the approval of the State Board of Education, setting standards for maximum special education class sizes and case loads;
- allows public school corporations to contract with private, not-for-profit school corporations to educate students who have been expelled from the school corporation and have been found to be mentally disturbed, or have been placed in the private school by a court or a local health department;

- requires schools, when teaching human sexuality, to teach that abstinence outside of marriage is the expected standard for school-aged children, that abstinence is the only sure way to prevent pregnancy and sexually-transmitted diseases, and that the best way to avoid such diseases is to establish a faithful, monogamous relationship in the context of marriage.

The section of this Act that concerns special education class sizes takes effect March 5, 1988. The remainder of the Act takes effect on July 1, 1988.

- HEA 1073 -- requires the state board of health to charge a fee of \$2.50 for performing any serological test on an individual seeking a marriage license;
- states that a person committed to a psychiatric hospital may be granted outpatient status if certain conditions are met;

- updates the duties given to the institute for autism;

- removes the requirement that the laboratory report provided to the state board of health determining an individual's immunologic response to rubella be confidential;

- makes technical changes in the controlled substances chapter of the Indiana Code.

This Act takes effect March 2, 1988.

- HEA 1092 -- allows a school employee to administer

injectable insulin or a glucose test by finger prick to a student if the employee has received proper training by a practitioner;

- before a school employee may administer injectable insulin or a glucose test by finger prick, the school must have on file a statement from a practitioner saying the employee received proper training and a statement from the student's parent granting permission;
- prohibits school employees from distributing contraceptives or other birth control devices.

This Act takes effect March 2, 1988.

- HEA 1198 -- increases membership of the state board of health from nine to eleven, adding a hospital administrator and a health facility administrator;
- requires the state board of health to certify 56 beds at White County's Tioga Pines long term care facility as eligible for Medicaid and Medicare reimbursement;

The section of this Act concerning membership on the state board of health takes effect July 1, 1988.

The section concerning Tioga Pines long term care facility takes effect March 3, 1988.

- HEA 1292 -- allows physically disabled persons and guide dog trainers in the process of training a dog to enter public buildings with a guide dog at no extra charge. Current law applies only to blind and hearing impaired people.

This Act takes effect July 1, 1988.

- SEA 68 -- reestablishes the administrative rules oversight committee;

- states that the committee may review any complaint filed by any person regarding a rule or practice of any agency.

This Act takes effect March 3, 1988.

- SEA 120 -- allows residential facilities for the developmentally disabled to participate with Indiana's Health Care Financing Authority to purchase new equipment or property;

- revises the definition of "health facility" to mean a place providing accommodation or treatment for more than four individuals (rather than three unrelated individuals) extending beyond a continuous 24-hour period in any one week;

-- increases membership on the community residential facilities council adding a member who is a CEO of a facility providing residential services only for the developmentally disabled.

The section of this Act that concerns the health care financing authority takes effect March 5, 1988. The remainder of the Act takes effect July 1, 1988.

- SEA 233 -- removes juvenile court from the definition of "member agency," which will now be defined as a county department of public welfare, a school corporation, or a community mental health center that is represented on a local coordinating committee by a voting member. A local coordinating committee was established in each county with legislation enacted in 1987 (effective July 1, 1988) to review each restrictive placement of a child;

- removes the juvenile court judge, or the judge's designee, from membership on the local coordinating committee.

This Act takes effect July 1, 1988.

- SEA 269 -- requires the state board of health to establish a 17-member inter-agency council on black and minority health to study the special health needs of minorities. The panel, which must report recommendations to the general assembly before November 1 each year, will also examine, among other things, public and private health services available to minorities, preventive measures concerning the leading causes of death among minorities, and coordination of health services to minorities;

- allows the state board of health to release confidential information on cancer patients to the cancer registry of another state if that state has entered into a reciprocal agreement with Indiana. The receiving registry must agree not to release identifiable information without the patient's consent.

This Act takes effect May 15, 1988.

Vetoed

One bill in the health/medical area was vetoed by Governor Robert D. Orr after receiving only five votes in opposition in the Indiana General Assembly:

SB 139 -- delays the implementation of the recommendations of the Prescription Abuse Study Committee until July of 1989.

Legislative Morgue

Many proposals in each legislative session fail to be passed into law. Some measures are defeated with a vote while other measures are never brought to consideration in a committee. Several of these bills which were unsuccessful this session were from the health/medical area. These proposals, many of which were not supported by the ISMA, are now resting in the Legislative Morgue. Below is a brief summary of some of those bills:

HB 1078 -- would have restricted the dispensing of medications by physicians;

HB 1267 -- would have allowed chiropractors to treat workmen's compensation patients;

HB 1309 -- would have established the committee of denturists examiners, and made practicing dentistry without a certificate a Class B misdemeanor;

SB 29 -- would have required pre-marital testing for syphilis and AIDS before a marriage license could be issued;

SB 151 -- would have established a certification procedure for persons engaged in respiratory care;

SB 169 -- would have allowed physical therapists to practice without an order or referral from a physician;

SB 286 -- would have required that, as a condition for medical licensure, a physician must accept the federal assignment rate for Medicare patients;

SB 352 -- would have provided a program of certification of two classes of social workers;

SB 374 -- would have prohibited variances in the amount charged for health care services.

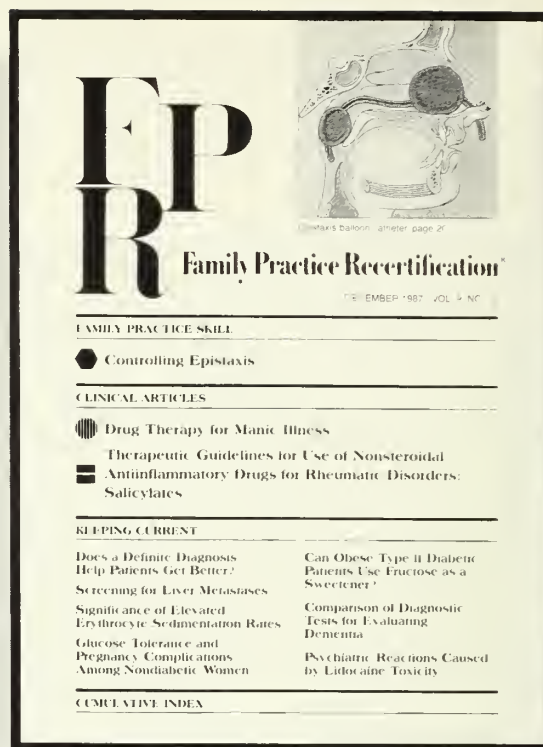
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CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Neonatal Sepsis

CONTINUED FROM PAGES 499-504

1. Which of the following statements is false?
 - a) Group B Streptococcus is the most common while *E. coli* is the second most common cause of early onset neonatal sepsis in the United States.
 - b) Group B Streptococcus is often maternally acquired.
 - c) *Staphylococcus aureus* rarely causes early-onset sepsis.
 - d) *Staphylococcus epidermidis* is a frequent pathogen in term infants.
2. Which of the following statements is true?
 - a) The incidence of neonatal sepsis has significantly declined for term and preterm infants with the advent of antibiotics and intensive care.
 - b) Of all infants infected with Group B Streptococcus, term infants have a greater mortality than preterm infants.
 - c) Pneumonia and septicemia frequently coexist in infected neonates.
 - d) Meningitis occurs in about 70% of infants with sepsis.
3. A neonate with sepsis may present with:
 - a) Apnea
 - b) Hypothermia
 - c) Shock
 - d) All of the above
4. A 15-hour-old infant was noted to be grunting, pale and refusing to feed. An initial laboratory work-up should include all of the following except:
 - a) Chest x-ray
 - b) CBC with differential and platelets
 - c) Skin surface and gastric aspirate cultures
 - d) Lumbar puncture
5. Significant maternal factors contributing to neonatal infection include which of the following?
 - a) Premature rupture of membranes
 - b) Prolonged rupture of membranes
 - c) Maternal fever
 - d) Chorioamnionitis
 - e) Maternal urinary tract infection
 - f) All of the above
 - g) None of the above
6. Which of the following statements is true about neonatal host defenses?
 - a) The neonate's skin and mucosal barriers are as efficacious as the skin of adults in preventing bacterial invasion.
 - b) Neonatal immunoglobulin production is deficient.
 - c) a only
 - d) b only
 - e) Both a and b
7. Which of the following tests is needed to confirm the presence of infection in a neonate?
 - a) Low total neutrophil count
 - b) Positive antigen study
 - c) Low fibrinogen study
 - d) Positive culture
 - e) Low fibronectin level
8. Exchange transfusion in neonatal sepsis:
 - a) May correct hematologic abnormalities but greatly compromises blood volume.
 - b) Does not produce an increase in leukocyte number.
 - c) May provide opsonins, immunoglobulins and complement.
 - d) Is without significant risk for the infant.
9. True statements regarding leukocyte transfusion include all of the following except:
 - a) Leukocyte transfusions are being investigated as a method to enhance neonatal host defenses.
 - b) Leukocyte transfusions are recommended by many investigators for all neonates with sepsis.

MAY CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the May 1988 issue: "Evaluation of the Uterine Cervix for Cancer."

- | | |
|------|-------|
| 1. b | 6. c |
| 2. a | 7. b |
| 3. b | 8. b |
| 4. c | 9. a |
| 5. b | 10. b |

CONTINUED ON PAGE 583

Answer sheet for Quiz: (Neonatal Sepsis)

- | | |
|------------------|---------------|
| 1. a b c d | 6. a b c d e |
| 2. a b c d | 7. a b c d e |
| 3. a b c d | 8. a b c d |
| 4. a b c d | 9. a b c d |
| 5. a b c d e f g | 10. a b c d e |

Name (please print or type)

Address

Identification number (found above your name on mailing label)

Signature

To be eligible for this month's quiz, send your completed, signed application before July 10, 1988 to the address appearing at the top of this page.

I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.



AUXILIARY REPORT

Ann Wrenn, Bloomington
ISMA Auxiliary President 1988-89

Welcome to a new year in the Indiana State Medical Auxiliary. I am going to take this opportunity to talk about our goals for this year. Mary Strauss, our national auxiliary president-elect, used the word "recommit" in a briefing session in Chicago. I am asking our members to recommit to themselves, to their physician spouses, to their families, and to the medical auxiliary. In these busy days of rush and rush some more, it is important to reflect on what we are doing and why we are doing it.

This year the state auxiliary will focus on four main areas: adolescent health issues, legislation involving the practice of medicine, support for medical families, and AMA-ERF. These four areas are important to each of us and to our communities. Because the auxiliary is a volunteer force, what we do is important in our communities. Betty Szewczyk, our national auxiliary president, has said: "Our image is a reflection of our service."

When someone asks you just what the medical auxiliary does, you will have the answer. We will focus on the

issues addressed in the White Paper on Adolescent Health published by the AMA last year. Among the topics are teen-age suicide and depression, alcohol and drug addiction, chewing and smoking tobacco products. The county auxiliaries will choose which topics they wish to affect in their communities. They will probably ask for assistance from their county medical societies.

The second targeted area is medical legislation. Julie Newland, ISMA staff, has earmarked 10 areas that will probably be addressed in the Indiana legislature this fall. Regardless of whether or not our members call their legislators, I want them to understand the terminology. If someone asks them to explain mandatory assignment I want them to know the answer. If someone asks them to explain (in simple terms) how the medical malpractice law benefits the patient, I want them to know the answer. Do our older members personally know the people in their communities who are active in the AARP? These are all pertinent questions we need to understand.

AMA-ERF contributions across this country have enabled medical schools to continue many excellent medical education programs. Because of government cut-backs and expenses, our contributions are very important. Donors can designate which medical school should receive their donations.

The last of the four areas is, in some ways, the most important. Support for medical families can cover just about any area you want it to. The stresses that face each of us can sometimes be overwhelming. Medical malpractice litigation, physician addiction to alcohol and/or drugs, divorce, and the challenges of raising children are all situations that cause stress. The medical auxiliary wants to help. We are in the beginnings of county programs that will support our members.

My challenge to the county auxiliaries is to address these four issues. Recommit to the medical auxiliary. Make our communities better places in which to live. Help organized medicine. Be informed on the issues. Be a part of this exciting experience.

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CANCER CORNER

WILLIAM M. DUGAN, JR., M.D., Indianapolis

"NEW APPROACHES to the Evaluation of Neoplastic Lymphoproliferative Disorders" (14th Annual Course) will be presented in Los Angeles Oct. 22-29. Sponsors are the University of Southern California School of Medicine, the University of Hawaii John A. Burns School of Medicine, and University Pathology Associates, Inc.

The course is designed for the physician who is involved in the histologic diagnosis or evaluation and therapy of patients with malignancies of the lymphopoietic system. Its major aim is to acquaint pathologists and clinicians with current information and methods now available for the immunologic, cytochemical and cytogenetic characterization of neoplasms of the immune system.

Discussions will include specific lymphomas and leukemias with emphasis on correlating morphology, immunohistochemistry, flow cytometry, phenotyping results, cyto-molecular genetics, and clinical features of lympho-proliferative disorders in several hundred patients. B-cell, T-cell and immunoblastic proliferations, Hodgkin's

disease and AIDS will be addressed. Results of monoclonal antibody studies with flow cytometry and frozen sections will be presented and correlated with diagnosis and therapy.

For tuition and reservations information, call (213) 258-8201.

"ADVANCES IN THE MANAGEMENT of Infectious Diseases" will be presented by the University of Michigan Medical School July 8-11 at the Grand Hotel, Mackinac Island, Mich.

The course is designed to provide the latest information concerning the diagnosis, treatment and prevention of common community-acquired and hospital-acquired infections.

For details, call Betty Phillips at (313) 763-1400.

"THE 11th ANNUAL San Antonio Breast Cancer Symposium" will be held Nov. 29-30 at the Hyatt Regency Hotel on the Riverwalk in San Antonio.

Speakers and topics will include: "Autoerime Regulations of Breast Cancer: Clinical Implications," C. Kent

Osborne, M.D.; "Adjuvant Therapy of Breast Cancer," I. Craig Henderson, M.D.; "Genetic Alterations in Primary Breast Cancer," Robert Callahan, Ph.D.; and "Chemo Prevention in Breast Cancer," Trevor Powles, Ph.D.

For more information, write Terri Coltman, R.N., Cancer Therapy and Research, 4450 Medical Drive, San Antonio, Tex. 78229.

"NEW APPROACHES to the Treatment of Hormone Dependent Tumors" will be conducted Nov. 9-12 at St. Thomas, Virgin Islands.

The meeting will cover such topics as growth factors in the regulation of cancer, new pharmacologic therapy in the regulation of cancer, tumor necrosis factor and other anti-tumor biological substances, oncogenes and suppressor genes in cancer, antibody and antibody conjugates in the therapy of cancer, and new developments in the control of the metastatic process.

For information, write: Medical & Scientific Conferences Ltd., The Studio, 12 High St., Wheathampstead, Herts AL4 8AA, England.

Look-Alike and Sound-Alike Drug Names

BENJAMIN TEPLITSKY, R. PH.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

Category:
Brand Name:

Generic Name:
Dosage Forms:

Category:
Brand Name:
Generic Name:
Dosage Forms:

DOXYCYCLINE

Antibiotic
Vibramycin, Pfizer
Vivox, Squibb
Doxycycline
Tablets, Capsules,
Syrup, Powder for
Injection, Powder for
Oral suspension

PRONESTYL

Antiarrhythmic
Pronestyl, Princeton
Procainamide
Tablets, Capsules,
Injection

DOXYLAMINE

Sleep aid
Unisom, Leeming

Doxylamine succinate
Tablets

PROSTAPHLIN

Antibiotic
Prostaphlin, Bristol
Oxacillin sodium
Capsules, Powder for
oral solution, Powder
for inj.

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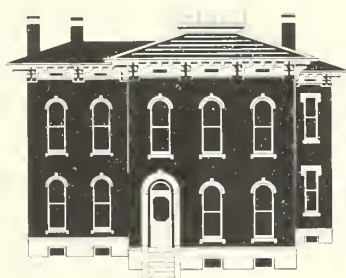
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The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

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Texas Injunction Halts Part B 'Overpayment Project'

The federal government should be enjoined from recouping alleged overpayments to physicians under Medicare Part B caused by a statewide fee schedule imposed on 18 medical procedures, a federal trial court in Texas has ruled.

Several physicians and medical associations filed suit to block efforts to recoup funds paid for physician services rendered in 1985 and 1986 under Medicare Part B. In July 1985, Blue Cross, the fiscal intermediary for the federal Medicare program in Texas, changed all of the codes for medical services from a Texas code to a federal code in accordance with a directive from the Secretary. Blue Cross encountered difficulty in matching the customary and prevailing charge data for 18 procedures to the federal codes. It chose to impose a statewide fee schedule for those procedures.

More than 16 months later, the government instructed Blue Cross/Blue Shield of Texas that payments made under the fee schedule from approximately July 1985 to April 1986 were overpayments and that recoupment should be instituted from 5,000 Texas physicians and 200,000

beneficiaries. The physicians argued that the payments were proper and that the government could not recoup any portion of them.

On a motion for a preliminary injunction, the court said that the dispute centered on whether the statewide fee schedule was a proper payment methodology. Under federal law, courts have no jurisdiction over disputes over the amount of benefits but do have jurisdiction over disputes involving payment methodology. Ruling that the physicians had borne their burden of proof and had met the four prerequisites for issuance of a preliminary injunction, the court said that there was a substantial likelihood of success on the merits. The government did not have good cause to reopen the determinations made for payments for the 18 procedures from July 1985 to April 1986.

The physicians established irreparable harm, since if the government recouped the alleged overpayments, the physicians could not recover the funds taken because the doctrine of sovereign immunity would prevent them from recovering from the government. The court said that any threatened harm to the government did not outweigh the injury to the physicians if an injunction were not issued.

Finally, the court said that the public would be disserved if an injunction were not issued. The public would be harmed if the government recouped money from citizens with the risk that the money was wrongfully taken and that the citizens could not later recover the wrongfully recouped amounts.

The court issued an order enjoining the government from carrying out the "Overpayment Project" and from instituting any recoupment actions against the physicians pending a hearing on the merits.—*Texas Medical Association v. Bowen*, Civil No. A-87-CA-688 (D.C., Tex., Jan. 11, 1988)—Courtesy of *The Citation*, Jan. 15, 1988.

For the Asking . . .

- The National Committee for Prevention of Child Abuse has released a third edition of the pamphlet, "Basic Facts about Child Sexual Abuse." Written in a question-and-answer format, the pamphlet answers 27 basic questions about the incidence, nature and legal aspects of child sexual abuse. Included is information on factors that contribute to incestuous behavior, descriptions of symptoms a sexually abused child might present and advice on what to do if child abuse is suspected. A single copy is available for \$2 plus 50 cents for shipping and handling. To order, send a check payable to NCPA, Sales Dept., P.O. Box 94283, Chicago, Ill. 60690. For discount quantity prices, call (312) 663-3520.

- "Health Resources for Older Women" is a new publication available from the National Institute on Aging (NIA) of the National Institutes of Health. The handbook includes information on normal changes that occur during the aging process, activities that promote good health, physical disorders that affect older women more frequently than other groups and concerns such as caregiving and financial planning. For a free copy, write to the NIA Information Center/Women, 2209 Distribution Circle, Silver Spring, Md. 20910 or call (301) 495-3455.

ANGLO-SAXON WORDS

Commentary

Use

I often hear people saying "utilize" or "utilization" when "use"—a simple Anglo-Saxon word—will get the job done easier.

Why use a three or five-syllable French-origin word when a common one-syllable word gets the message across more quickly?

Cause

In medicine why don't we say more often, "What is the cause?"—rather than "What is the etiology?"

"Etiology" means "study or

knowledge of causes."

Whenever I hear or read "etiology" my mind stumbles over this five-syllable Greek and Latin monster. And it takes a split second or so before I can "get my brain in gear" again and go on with the text.

And if "etiology" does this to an experienced physician, think what it must do to the minds of patients—complete bafflement.

It's so much easier to use the Anglo-Saxon word "cause." It's a 5-cent word, easily understood by everybody.

If it's felt necessary to use a \$10.00 word like "etiology," well then do so. But for everyday work, let's use the simple, cheap word—"cause."—R.J. Noveroske, M.D., Newburgh

Easy Street Aids Recovery of Rehabilitation Patients

Easy Street, a multi-purpose area that simulates real-life challenges faced by rehabilitation patients, has recently opened at Bethesda Hospital in Cincinnati, Ohio.

The new program is a seven-module unit designed to maximize physical, cognitive, psychosocial and language rehabilitation. The modules include:

- A car to help patients master obstacles such as curbs, heavy doors and other safety considerations.
- The Kroger grocery to help patients practice shopping, planning meals and unit pricing.
- The cafe and restaurant to allow patients to practice the skills needed to eat out.
- The bus to help patients learn how to negotiate steps and use handrails and coin boxes.

• The bank to give patients practice at negotiating waiting in line and communicating financial need.

• The office to help patients work with office equipment and activities.

Patients using Easy Street are those who have suffered head injuries, a stroke or other debilitating illness or injury.

Bethesda's Easy Street is the tenth program of its kind in the country.

UT Board Approves New Name for Cancer Center

The University of Texas System Board of Regents recently approved changing the name of its cancer center to The University of Texas M.D. Anderson Cancer Center.

The new name replaces The University of Texas System Cancer Center, a title designated in a 1972 reorganization of the UT System, and also M.D.

Anderson Hospital and Tumor Institute, first used in 1955.

The choice of the new name takes three factors into consideration: a desire to retain the renowned M.D. Anderson portion, the need to reflect the institution's position within the UT System and a determination to be concise and clear.

CME Quiz ...

CONTINUED FROM PAGE 565

- c) Leukocytes for transfusions are not readily available in all hospitals.
- d) Exchange transfusion with fresh whole blood may supply a large number of neutrophils to septic neonates.
10. Of the following choices, which is recommended for all neonates with sepsis?
 - a) Leukocyte transfusion
 - b) Exchange transfusion
 - c) Fibronectin transfusion
 - d) Immunoglobulin infusion
 - e) Antibiotics and supportive care

Physician Recognition Awards



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



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 Gordon, Mark, Munster
 Hall, Donald L., Petersburg
 Hibbeln, Frederic P., Indianapolis
 Horner, Terry G., Indianapolis
 Johnson, Harold V., Evansville
 Kerlin, Joseph C., Danville
 Kim, Charles Y., Terre Haute
 Liebner, Michael S., Logansport
 Lovall, Larry D., Danville
 Lyons, Charles R., Wabash
 Mabel, Thomas A., Noblesville
 Mayer, John R., Indianapolis
 McLaughlin, David S., Indianapolis
 Monn, Larry N., Indianapolis
 Moore, Thomas S., Indianapolis
 Moskwinski, Rebecca E., Granger
 Muhler, Joseph C. II, Fort Wayne
 Nill, John H., Fort Wayne
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 Paff, James R., Kokomo
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 Park, Jason Y., Terre Haute
 Patel, Kant K., Connersville
 Peduk, Maria A., Evansville
 Pontaoe, Alejandro G., Evansville
 Pratt, George B., Zionsville
 Priddy, Marvin E., Fort Wayne
 Rhynearson, William R., Indianapolis
 Roberts, Ronald D., Columbus
 Sabens, James A., Indianapolis
 Shugart, Robert R., Fort Wayne
 Silvero, Hubert L., Fort Wayne
 Tadatada, Victoriano J., Salem
 Trammell, Terry R., Indianapolis
 Tran, Lau, Lyons
 Walker, Thomas M., Brownsburg
 Wayne, Lisle II, Evansville
 Webb, Orville L., New Castle
 Weiss, Brian H., Merrillville
 Wells, William R., Princeton

NEWS NOTES

Here and There . . .

Dr. Raeburn M. Evans of Indianapolis has been appointed to the Indianapolis Police Department's Civilian Merit Board.

Dr. Harold G. Halbrook, an Indianapolis cardiovascular surgeon, was the guest speaker at the University of Evansville's Neu Chapel Convocation in March; he is a graduate of the school.

Dr. Frank A. Beardsley of Frankfort provided information on cholesterol to members of the Lebanon Kiwanis Club during a March meeting.

Dr. George W. Sorrells, a Bedford pediatrician, spoke on "Suicide and Depression: Mixed Feelings" during a March forum sponsored by the Lawrence Council for Youth and the Lawrence County Welfare Department.

Dr. Philip N. Eskew of Carmel spoke on "Menopause and the Uses of Estrogen" during a March program at St. Vincent Carmel Hospital.

Dr. Beatrice M. Hernandez of LaPorte spoke to members of the Union Mills Lions Club and their guests during a March meeting.

Dr. Loren H. Martin of Indianapolis was honored recently at a National Doctor's Day luncheon at Frame Nursing Home; he has been the staff physician for the nursing home and Frame House Manor since 1983.

Dr. Richard N. Woodruff of Richmond has been named a fellow of the American College of Obstetricians and Gynecologists.

Dr. James A. Johnson of Richmond has been certified by the American Board of Internal Medicine.

Dr. Wilbur D. McFadden of North Manchester recently passed the certification examination of the American Medical Society on Alcoholism and Other Drug Dependencies; he is the medical director of the Wabash Addiction Care Center at Wabash County Hospital.

Dr. Robert J. Kinsey Jr., a Kokomo obstetrician and gynecologist, discussed hormone replacement therapy during a March program sponsored by Howard Community Hospital.

Dr. Raymond W. Nicholson of



Indiana Historical Society Displays 'Quack Remedies'

Pharmaceutical bottles and packaged medications from the late 19th and early 20th centuries are being displayed through July 20 at the Indiana Historical Society, located on the third floor of the Indiana State Library, 315 W. Ohio, Indianapolis.

The pharmaceuticals on display in the "Quack Cures and Remedies" exhibit are on loan from the Indiana Medical History Museum by Dr. Robert W. Mouser, an Indianapolis

physician. Photographs of traveling medicine shows also are featured.

Some of the so-called remedies in the display were harmless, but others contained mercury, cocaine, opium, heroin, strychnine and large amounts of alcohol.

Dr. Mouser started his collection in 1957.

The exhibit is open from 8 a.m. to 4:30 p.m. Monday through Friday and 8:30 a.m. to 4 p.m. Saturdays.

Evansville participated in five public forums on AIDS held during April at various sites in Evansville.

Dr. Lawrence D. Rink, a Bloomington cardiologist, spoke on cholesterol management at an April meeting of the HEARTeam Cardiac Support Group at Bloomington Hospital.

Dr. Alfred C. Cox of South Bend was re-elected president of the medical staff at Memorial Hospital of South Bend; also re-elected were Dr. James L. Grainger, vice-president, and Dr. Larry G. Thompson, secretary-treasurer.

Dr. Tae G. Kiehm of Mishawaka answered questions for parents during a March meeting about childhood diabetes at St. Joseph Hospital.

Dr. Joseph C. Copeland of Anderson spoke on common forms of cancer in women during an April Women and Health program sponsored by Community Hospital of Anderson.

Dr. James D. Kubley of Plymouth recently passed the examination for

certification by the American Medical Society on Alcoholism and other Drug Dependencies.

Dr. Edwin C. McDaniel was elected to a two-year term as president of the medical staff of Winona Memorial Hospital in Indianapolis; Dr. William R. Storer is president-elect, and Dr. O. T. Gordon Jr. is secretary-treasurer.

Dr. Max A. Henry, a Columbus ophthalmologist, spoke on "Diabetes and the Eye" during a March program at Decatur County Memorial Hospital.

Dr. Randolph W. Lievertz of Indianapolis was a featured speaker at the 10th Annual Metropolitan Hospital Clinical Update in Medicine and Surgery held in Grand Rapids, Mich., during March; he spoke on "Estrogen and Menopause: Update and Options."

Dr. Thomas E. McSoley and Dr. Thomas J. Spahn of Indianapolis recently attended a symposium in Key Largo, Fla., on "The Aging Face;" the American Academy of Facial Plastic Surgeons sponsored the course.

Dr. J. Douglas Graham and Dr. Jeffrey L. Christie of Beech Grove recently were certified as diplomates in the subspecialty of cardiovascular disease.

Dr. Mark Holbreich of Indianapolis recently was appointed chairman of the American College of Allergy and Immunology's Committee on Asthma Camps.

Dr. Kenneth H. Brown of New Albany, Dr. John R. Higgins of Floyds Knobs, Dr. James Y. McCullough Sr. of New Albany, Dr. William F. Ruoff of New Albany and Dr. Irvin H. Sonne Sr. of Jeffersonville were honored on National Doctors Day by the Floyd County Medical Society Auxiliary; they were granted emeritus membership in the county medical society.

Dr. Karl L. Manders of Indianapolis presented a paper at the Ninth International Hyperbaric Medicine Seminar held during April in Jakarta, Indonesia.

Dr. Dean D. Maglinte of Indianapolis served on the faculty of the 31st Annual Postgraduate Course in Diagnostic Radiology sponsored by the University of California, San Francisco, in March.

Dr. Ray E. Drasga, a Merrillville oncologist, spoke on "Recurrence and Metastasis" at an April meeting of the Northwest Indiana group of the Y-Me Breast Cancer Support Program; he also has won a grant from the Hoosier Oncology Group of the Walther Medical Research Institute in Indianapolis.

Dr. Sheldon J. Friedman, Dr. Anthony J. Cossell and Dr. Bruce F. Schilt, Noblesville, discussed myocardial ischemia and infarction during an April program in Carmel.

Dr. William E. Weber Jr., a Bloomington plastic surgeon, was the host for a cosmetic surgery seminar held in April at Bloomington Hospital.

Dr. Robert M. Seese of Delphi was honorary chairman of the Heartbeats Health Festival held in April at Delphi Community High School.

Dr. Donald A. Dian, an adolescent medicine specialist from Bluffton, spoke at the annual Adolescent Seminar for school personnel, nurses, social workers and others who interact with adolescents; the program was

held in April at the Caylor-Nickel Medical Center in Bluffton.

Dr. Lance A. Pickrell, a Terre Haute ophthalmologist, has been named a diplomate of the American Board of Ophthalmology.

Dr. Stephen H. Neucks of Indianapolis answered questions about arthritis during an April luncheon lecture sponsored by the Center for Older Adults of Community Hospitals Indianapolis.

Dr. Jay R. Tuttle of Vincennes spoke on lung cancer during the March meeting of Families Facing Cancer at Good Samaritan Hospital in Vincennes.

Dr. Michael E. Eads, an infectious disease specialist from Indianapolis, discussed AIDS during the March meeting of the Easy Breathers at St. Francis Hospital Center in Beech Grove.

Dr. Eugene R. Roach of Beech Grove spoke on "The Brain" during an April meeting of the Parkinson's Awareness Association in Indianapolis.

Dr. James M. Fink of South Bend was the featured speaker during an April lecture series at St. Joseph's Medical Center on how to keep a healthy heart.

Dr. Stuart E. Harlowe of New Albany directed an April seminar on urinary incontinence at Floyd Memorial Hospital.

New ISMA Members

Martin F. Abbett, M.D., Richmond, psychiatry.

Jack R. Adair, M.D., Indianapolis, psychiatry.

Patrick R. Anderson, M.D., Richmond, internal medicine.

Ruth S. Bainbridge, M.D., Marion, family practice.

Vincent M. Bournique, M.D., Indianapolis, internal medicine.

Pamela Y. Brewer, M.D., Indianapolis, family practice.

David A. Campbell, M.D., South Bend, facial plastic surgery.

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

Doug Charlesworth, M.D., Goshen, family practice.

Dolores F. Cikrit, M.D., Indianapolis, general surgery.

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Jerry A. Dearth, M.D., Grabill, family practice.

Timothy A. Delehanty, M.D., Michigan City, obstetrics and gynecology.

Michael H. Fritsch, M.D., Indianapolis, otolaryngology.

Noli C. Guinigundo, M.D., Rushville, family practice.

Daniel W. Hicks, M.D., Indianapolis, psychiatry.

Suhayl J. Nasr, M.D., Michigan City, psychiatry.

Matthew R. Phillips, M.D., Indianapolis, family practice.

Bharat K. Pithadia, M.D., Knox, general practice.

Poopalasingham Poovendran, M.D., Marion, anesthesiology.

Dennis L. Roberts, M.D., Shelbyville, family practice.

Kenneth D. Watkins, M.D., Winchester, family practice.

Timothy R. Williams, D.O., Vincennes, anesthesiology.

Robert D. Yee, M.D., Indianapolis, ophthalmology.

Robert M. Young, M.D., Richmond, psychiatry.

Residents:

Terence J. Cudahy, M.D., Indianapolis, anatomic and clinical pathology.

Jon C. Finley, M.D., Indianapolis.

Steven A. Fritsch, M.D., Indianapolis, radiology.

Mark E. Hatfield, M.D., Muncie, internal medicine.

David W. Hollensbe, M.D., Indianapolis, urological surgery.

Shobha S. Krishnan, M.D., Indianapolis, family practice.

Sherman D. McMurray, M.D., Indianapolis, anesthesiology.

Scott T. Miles, M.D., Beech Grove, obstetrics and gynecology.

David Rosenberg, M.D., Indianapolis, pediatrics.

Karl W. Siebe, M.D., Greenfield, Wis., dermatology.

Lynn L. Witty, M.D., Anderson, internal medicine.

One out of ten women will develop breast cancer!



"I know.
I was that one in ten.
And mammography
helped save my life."

Debra Strauss



Thanks to mammography, a fast and simple x-ray technique, breast cancer can now be detected at its earliest stage—while it is still highly curable. If you're over 35, the American Cancer Society urges you to please call your doctor for an appointment.

Commemorating



Years of Life!

Join us



Coping With Stress

by Arthur R. Pell, Ph.D.
Consultant, Dale Carnegie & Associates, Inc.

What do you do when you feel overwhelmed by stress? All of us face stress in our work and in our lives. Stress is not necessarily bad. Stress often motivates us to accomplish things that seem impossible to achieve. However, when stress becomes too great to handle, it can lead to physical and psychological impairment.

Fortunately, it is possible to cope with most stressful situations by applying one or more of the "stress copers" listed in the acronym, "STRESS."

S elf-discipline
T ender loving care
R elaxation
E xercise
S ense of humor
S eek help from others.

Self-Discipline

Ben Karp's temper had caused him innumerable problems in his life. He had a short fuse and whenever he was the slightest bit stressed, he would scream at whoever was near him. It would relieve the immediate tension in him — but cause tension in all the people around him.

When Ben was cautioned by his boss that, if he could not keep his temper under control, his future in the company was in jeopardy, he realized that what he considered a stress reliever — getting the stress out of his system by ranting and raving — was not only causing problems with other people, but actually exacerbating his own stress. This awareness led to a concerted effort on Ben's part to contain his emotional outbursts. Ben made a game out of this and, by rewarding himself with a small treat each time he succeeded, he built up his resistance to give in to his urges. Not only did this reduce the number of tantrums, but enabled him to accept more readily the matters that had caused the tantrums, reducing the stress of his job.

Tender Loving Care

Taking care of oneself is important to good health and people in good health are less likely to be stressed. Beverly was overweight, had a slightly elevated blood pressure and always seemed to be tense. Everything annoyed her and she had frequent headaches and other physical problems. She always looked bedraggled and paid little attention to her clothes and appearance. She blamed all this on the pressures of her job. Her physician suggested that the real reason may be the reverse. He put her on a weight-reduction and a blood-pressure-control diet. The result: She lost weight, felt healthier and started to take more interest in her appearance. She changed her hair style and bought some new clothes. By treating herself with tender, loving care, Beverly became less tense and was able to cope with many of the aspects of her job that had previously stressed her.

Relaxation

Most stress experts agree that when one is under stress, relaxation is the most effective immediate therapy. How one relaxes depends on the circumstances in which the stress occurs and the different methods of relaxation appropriate for the individual and the situation.

In a recent survey, this author asked a group of men and women what they did to relax when they were pressured

on the job. Among the responses:

... "I get out of the office and window shop."
... "Yoga exercises"
... "Meditation"
... "Deep-breathing exercises"
... "If it's a nice day, I go outside and get some fresh air."
... "I stop working on the assignment that pressures me and do some other work. When I get back to the original job, it's no longer as stressful."

Each person should develop several activities that can relax them when under pressure that can be appropriately engaged in on the job. Even a few relaxing moments can reduce the stress and enable a person to return to the job refreshed and ready to deal with it.

Exercise

Steve, a money manager in an investment firm, had to make decisions every day which could make or lose millions of dollars for his company. He came home from work so stressed that he would yell at his children and fight with his wife. It reached the point where his children would hide when they heard his car coming into the driveway. At the advice of a counselor, he joined a health club. Instead of going straight home after work, Steve now plays a hard game of racquetball at the gym. By the time he gets home all the tension is out of his system and a wholesome family life has been re-established.

Sense of Humor

When the pressures are beating us down, it is hard to see any humor in a situation. However, when we look back at things that have stressed us in the past, we often laugh at them.

Karen's boss had just chewed her out. Sure, she had misinterpreted his instructions and made a major error in the project, but he should have recognized that, if his instructions has been clearer, this wouldn't have happened. She was tense, unhappy and felt unfairly treated. However, instead of letting this dominate the rest of her day, she thought, "Didn't he look silly with his red face and the way he jumped up and down." She began to laugh and the stress began to fade as she tackled the job of correcting the project.

Seek help from others

Sometimes stress is so overwhelming we cannot cope alone. Professional counselors, clergy, specialists in specific areas can be called upon to help. When Judith's husband died, she was so distraught she could not do her job. Fortunately, she had the good sense to seek help from a grief therapist, who helped her cope with the situation.

Remember, you are not alone. Some companies have Employee Assistance Programs to help their employees overcome personal problems that cause stress. Community services and private sources are available almost everywhere.

Don't let stress get you down. By applying one or more of the above suggestions, you can take steps that will help you cope with the problems that pressure you and enable you to get back to a normal and productive life.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

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OBITUARIES

Marshall H. Seat, M.D.

Dr. Seat, 63, a Washington, Ind., family physician, died March 24.

He was a 1952 graduate of Indiana University School of Medicine.

Dr. Seat, a member of the American Academy of Family Physicians, established Washington Medical Clinic with two partners in 1972. He was a former president of the Daviess-Martin County Medical Society.

Milan D. Baker, M.D.

Dr. Baker, 78, a retired Culver physician, died March 23 at his home.

He was a 1933 graduate of the University of Nebraska College of Medicine.

Dr. Baker retired as Culver Military Academy physician in 1970. He was a past president of the Marshall County Medical Society.

Robert W. Oliphant, M.D.

Dr. Oliphant, 79, a retired Terre Haute physician, died March 2 at his home.

He was a 1936 graduate of Indiana University School of Medicine and an Army veteran of World War II.

Dr. Oliphant, who practiced medicine in Terre Haute 45 years before retiring in 1985, was a former president of the Vigo County Medical Society.

Marion H. Bedwell, M.D.

Dr. Bedwell, 88, a retired Sullivan physician, died April 2 at the Sullivan Convalescent Center.

He was a 1927 graduate of Indiana University School of Medicine and a World War I veteran.

Dr. Bedwell practiced medicine in Sullivan from 1929 until his retirement in 1985.

Charles E. Sheets, M.D.

Dr. Sheets, 68, a Manilla family physician, died March 28 at his home.

He was a 1952 graduate of Indiana University School of Medicine.

Dr. Sheets was a former chief of staff at Rush County Memorial Hospital and former Rush County deputy coroner. He had lived and practiced medicine in the Shelby County-Rush County area since 1953. He was a member of the American Academy of Family Physicians.

Walter A. Dycus, M.D.

Dr. Dycus, 73, Evansville, died Dec. 7, 1987.

He was a 1938 graduate of St. Louis University School of Medicine and served in the Army Medical Corps during World War II.

Dr. Dycus was a member of the International College of Surgeons.

Joseph H. Baltes, M.D.

Dr. Baltes, 79, a retired Fort Wayne physician, died March 12 at his home.

He was a 1935 graduate of St. Louis University School of Medicine and served as a flight surgeon during World War II. He retired in 1984.

Dr. Baltes was a former commissioner and former secretary of the Allen County-Fort Wayne Board of Health and was an examiner for the Indiana State Boxing Commission. He was a member of the ISMA Fifty Year Club and the Aerospace Medical Association.

William C. VanNess, M.D.

Dr. VanNess, 71, a retired Summitville physician, died Feb. 26 at Summit Convalescent Center.

He was a 1940 graduate of Indiana University School of Medicine and served in the Army Medical Corps during World War II.

Dr. VanNess founded and designed the VanNess Clinic in 1958 and opened Summit Convalescent Center in 1972. He was a member of the American Academy of Family Physicians and was certified by the American Board of Family Practice.

David K. Johnloz, M.D.

Dr. Johnloz, 49, a Bloomington internist and gastroenterologist, died April 5. He was killed when a tractor he was driving on his farm overturned and crushed him.

He was a 1965 graduate of Indiana University School of Medicine and a U.S. Air Force veteran.

Dr. Johnloz would have been chief of staff at Bloomington Hospital next year. He was a member of the American College of Physicians and the American Society of Internal Medicine and a diplomate of the American Board of Internal Medicine. He was a clinical professor of internal medicine at Indiana University School of Medicine.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of INDIANA MEDICINE.

Contributions made to the Foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for Federal estate and gift tax purposes.

The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

Irvin W. Wilkens, M.D.
J. Neill Garber, M.D.
J. Melvin Masters, M.D.
Nancy A. Roeske, M.D.
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Lloyd A. Vogel, M.D.
Arvine G. Popplewell, M.D.
Mildred Ramsey
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John Bush

COMMERCIAL ANNOUNCEMENTS

ASSISTANT DIRECTOR—Family Practice Residency, Fort Wayne Medical Education Program. The Fort Wayne Family Practice Residency is seeking a replacement for the Assistant Director responsible for Residency activities at Lutheran Hospital. There will be some staffing of residents in The Family Practice Center, as well as overseeing the residents' activities at Lutheran Hospital. Limited private practice opportunity is also available. The Fort Wayne Family Practice Residency is a community based, university affiliated, ACGME approved Residency. The approval is for 10 residents in each of three years. All faculty presently hold Indiana University School of Medicine faculty appointments. The applicant would be expected to present credentials establishing eligibility for a similar appointment. Applicants must be Board Certified in Family Practice and possess or obtain a current Indiana license to practice medicine in Indiana. Inquiries, credentials and curriculum vitae with references should be mailed to: Director, Family Practice Residency, 2448 Lake Ave., Fort Wayne, Ind. 46805—(219) 422-6573.

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WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. Associated widened QRS complex or arrhythmia requires prompt additional therapy. Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or

without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of triamterene and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Angiotensin-converting enzyme (ACE) inhibitors can elevate serum potassium; use with caution with 'Dyazide'. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency.

Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic, and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The

following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function. Thiazides may add to or potentiate the action of other antihypertensive drugs. Diuretics reduce renal clearance of lithium, and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics); Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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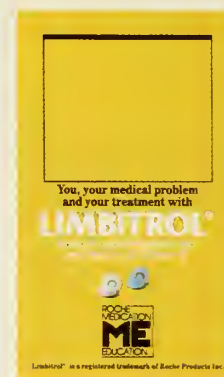
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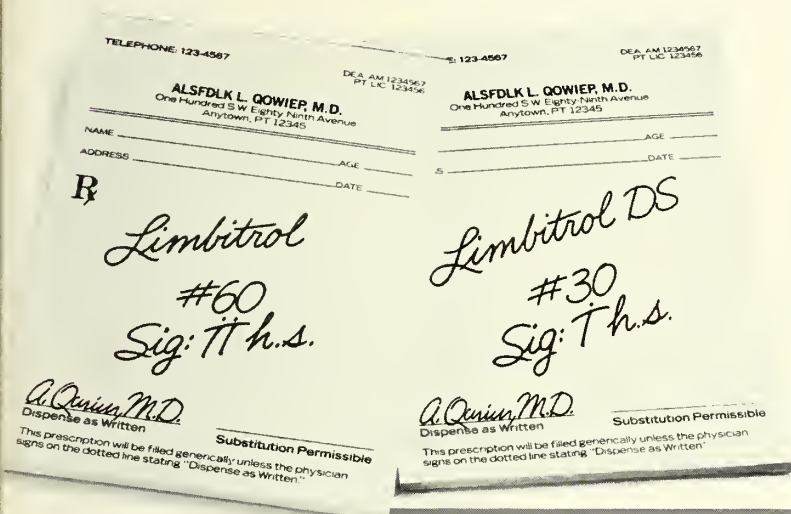
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References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner VP, et al: *Psychopharmacology* 61:217-225, Mar 22, 1979.

Limbitrol[®]® Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, over sedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: **Cardiovascular:** Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. **Psychiatric:** Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. **Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. **Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. **Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. **Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. **Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. **Endocrine:** Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. **Other:** Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

How Supplied: Double strength (DS) Tablets, white, film-coated, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt), and Tablets, blue, film-coated, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose[®] packages of 100; Prescription Paks of 50.



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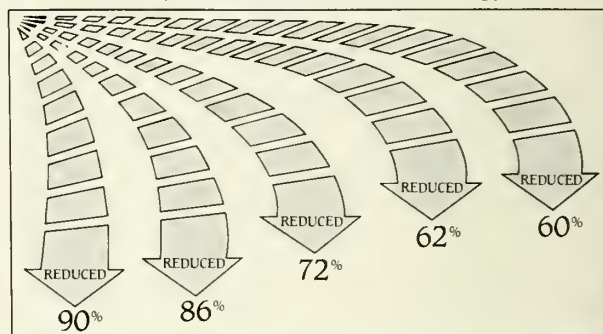
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